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ADDRESS.

ADDRESS ON OBSTETRICS.

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In taking up the evidences of recent progress in obstetrics, I wish first to call your attention to the growing appreciation in all civilized communities of the services of the skillful accoucheur. Then we remember that when Dr. Wm. Shippen, Jr., began his lectures in Philadelphia, in 1765, a little over a century ago, the practice of midwifery was entirely in the hands of nurses, mostly of the Sairy Gamp style so graphically described by Charles Dickens, and the physician was only called in after some grave emergency had arisen and the life of the patient imperiled. When we recall the fact that it was not until 1808 that the trustees of the University of Pennsylvania created an independent Chair of Obstetrics in the faculty, and made the attendance upon the lectures obligatory upon the students, we begin to realize the great strides that have been made in this, the latest born department, the most vigorous child in the entire medical curriculum. Very much light has been thrown upon this subject by recent advances in bacteriology and in antiseptic surgery. We no longer discuss the question of the contagiousness of puerperal fever; but, when sepsis unfortunately occurs, we proceed at once to determine the source of the infection, eliminate the poison, and check its pernicious activity. Increase of knowledge brings increase of responsibility. The obstetrician of the present day is a man of vastly more information, has a higher appreciation of the importance of his chosen department, and consequently has a keener sense of the grave responsibility resting upon him than those of earlier times. Carelessness, ignorance and neglect can no longer be tolerated in the lying-in room in view of the serious consequences which result and which may, almost in a moment, convert the house of rejoicing into a house of mourning.

I hold strongly to the opinion that labor is a purely physiologic function, and strictly a normal process of the organism. There is no such thing as unnatural labor, and I am entirely opposed to that mental attitude which would divide presentations or deliveries into those which are natural and those which are not natural. Given certain conditions, certain contingencies must arise, but even the most difficult and complicated labor is still a natural one. It is true, however, that the conditions attending the parturient state may be those which we recognize as being the most favorable to the expulsion of the child, or, on the other hand, various obstacles may be encountered which more or less interfere with delivery and produce difficult labor. A logical division, therefore, would be into, 1, ordinary or uncomplicated labors, and, 2, exceptional or difficult labors.

With regard to the first group, which comprises more than nine-tenths of all the cases, the present teaching of obstetric science is simply to secure cleanliness and to interfere as little as possible. Many a normal case has been converted into a pathologic one by too frequent digital examinations, especially where the examining finger has been the bearer of infection. Many a natural labor has been complicated by lacerations, owing to the desire of the attending obstetrician "to hurry things up" so that he could get off to keep some other engagement not always professional. Many a physiologic parturient process has been rudely checked and converted into a pathologic one by the over-zealous attentions of a physician who seems bent on demonstrating the truth of the old aphorism, "Meddlesome midwifery is bad." In the majority of cases nature is perfectly competent to accomplish the delivery of the mother without assistance.

Just consider for a moment the logical import of the teaching that a woman after confinement is in the same condition, as a case of amputation with a supposed infectious wound, and that blood-poisoning will develop unless vigorous antiseptic measures are taken to protect her from it. If nature had, with inconceivable malignity, laid a trap, from which there was no escape for any parturient woman, unless the antiseptic art of the obstetrician should release her, how could the human race have survived all these dangers, while waiting for the doctrine of antisepsis to be developed and carried into practice? If these precautions and attentions are necessary in every case, how is that savage races with their rude midwifery methods do not perish from the face of the earth? When I practiced medicine in the State of Louisiana, a woman stopped and spent the night at my house who had been captured by the Comanche Indians with her husband and two sons. The husband and sons were killed in her presence. She lived for three or four months with the Indians and, during this time, she was pregnant and miscarried at the sixth month, while in captivity. She told me that the Indian women marched with their husbands until they were taken in labor, and then they were helped to the nearest pool of water. As soon as the child was born it was plunged into the cold water. If it struggled vigorously it was allowed to live, if not it was drowned. The mother also went into the cold water as soon as the after-birth was thrown off. The child was then strapped upon her back and she followed the tribe and resumed her work as if nothing unusual had occurred. The point that I make is not that this is the best treatment for the lying-in patient, but it is that, even with the neglect of everything that we regard as essential, nature does the work and the great majority of mothers actually do survive the perils of childbirth.

I am also strongly opposed to the resort to instru-

mental delivery merely to suit the convenience of the physician. Now, I do not want to be misunderstood. I look upon the forceps as the most humane of instruments, and do not stand aside and hesitate when they are to be used in the interest of the mother or child. Some years ago, by invitation, I went to hear my friend, Dr. Albert H. Smith lecture before the Philadelphia County Medical Society on the use of the forceps, and in the discussion of the paper I expressed my disappointment, and said that "I had come up to learn when not to use the forceps." He thought that the forceps should be used whenever there was the slightest delay to the passage of the child in the second stage of labor, that the patient should not be allowed to suffer. It requires good judgment to recognize when to refrain from using the forceps. There is ofttimes too much haste to resort to their powerful aid; traumatism may be thus produced, and a dangerous chain of consequences be initiated. My conviction is that the obstetrician has no right to consider himself at all, but only his patients, in the process of labor. In other words, I would state the duty of the obstetrician, in attending a case of normal unobstructed labor, is to be summed up in the words "cleanliness" or "asepsis." He should be on the alert, ready to render assistance should occasion arise, but otherwise he should practice a policy of non-interference. I believe the old country doctor, who boasted that he had never used the forceps and stated that plenty of good fresh lard and a good deal more patience were all the instruments he wanted, is far safer than many of the present day who seem to feel called upon to use instruments in nearly all their cases. Even at any time in the most skillful hands, there is always more or less danger to the integrity of the soft parts, and when used to save time for the doctor, or magnify his importance, I consider it a crime.

While insisting upon the usefulness of a warm soap and water bath at the beginning of labor and a preliminary douche to cleanse the birth canal, if the patient does not seem to be cleanly, especially in lying-in hospitals, I am opposed to subsequent repeated douching and especially to irrigation of the uterus after labor except where absolutely indicated to overcome an actual septic condition, due to retained placenta, or other cause. Chemic disinfectants are not required to obtain and maintain a condition of asepsis, and their routine use is to be deprecated in the parturient woman. On the other hand, I would commend the practice of rendering the hands of the obstetrician and all instruments used by him, as aseptic as possible by the abundant use of soap and hot water, followed by a rinsing with solution of bichlorid of mercury (1 to 2000). By the universal adoption of this plan of treatment, puerperal septicemia may be eliminated from among the risks of childbirth. By carrying it out at the Preston Retreat and in private practice, Dr. Joseph Price claims that he has not had a case of this character in nearly ten thousand labors. Moreover, there is an incidental advantage by the adoption of this method, which deserves our serious consideration. It is the abolition of ophthalmia neonatorum. Dr. Price has recently stated that infantile ophthalmia has been banished from his practice by the adoption of asepsis in the conduct of labor, and it has been claimed that three-fourths of the blind asylums could be closed for want of inmates, if this plan of conducting the obstetric procedure were universally followed. I have never kept a record of my obstetric cases, but in a very active practice of forty-six years they have run into the thousands. I do not remember to have had a dozen cases of sore eyes and not a single infant lost its sight. I conscientiously assert that I never lost a patient in labor, or as the result of labor. I do not say this in a boastful spirit, for I feel that I have been more blessed than skilled, but I say it because it is a fact, and I think my scrupulous regard for cleanliness has had something to do with it.

During the past year, a law has been very carefully framed by a committee of this society and has now passed the legislature, which has for its object the prevention of blindness. It makes it incumbent upon midwives, obstetricians and health officers to see that an infant with sore eyes shall receive prompt attention, in order that its sight may not be lost through neglect. While we thoroughly approve of the humane motive which inspired this legislation and anticipate great benefit from its enforcement, we still think prevention better than cure, and insist upon the prophylactic value of absolute cleanliness in the conduct of labor, as conducive to the best interests of both mother and child.

Just here I want to frown upon the fad of the routine use of anesthetics in labor to save suffering. Who can tell what the effect of these God-given pains, the result of nature's force, may have upon the mental economy of the mother? The use of anesthetics and the hasty removal of the placenta by traction are most fruitful sources of post-partum hemorrhage, and of asphyxiated infants. I do not intend to discuss the medical treatment of the puerperal period; but would simply offer a word of protest against routine. Unless there is good reason to be given, the fluid extract of ergot should remain in the bottle, likewise the castor oil, quinin and the malt liquors. Meddlesome midwifery is bad and so is officious medicine-giving. There is a principle in letting well enough alone and it takes some experience and good judgment to know when to do it. Oliver Wendell Holmes, in speaking of the abuse of physical diagnosis, said that some patients "are done to death with the pedantic foolings of the specialist," and the remark applies with peculiar force to midwifery practice. In connection with this subject as a collateral branch, I may refer with commendation to a recent communication to the Philadelphia County Medical Society by Dr. W. Reynolds Wilson on the treatment of ophthalmia neonatorum by irrigation with distilled water.[1]

It is gratifying to note that with an increasing familiarity with the conditions of delayed labor, there have been devised methods which are favorable to the preservation of the life of both the mother and the infant and that the dreadful alternative involving the sacrifice of human life by craniotomy is now rarely presented. In case of eclampsia at term and also in the condition of placenta previa, requiring rapid evacuation of the contents of the uterus, I must speak in terms of high commendation of the method of rapid manual dilatation and delivery devised by Dr. Philander A. Harris, of Paterson, N. J., first described in the *American Journal of Obstetrics* last year.[2] In a discussion of the subject of "accouchement forcé" before the Philadelphia Obstetrical Society, Dr. Harris recently reported[3] his entire experience with his

[1] Medical News, April 13, 1895.
[2] Vol. xxix, p. 37.
[3] Annals of Gynecology and Pediatry, Vol. viii, p. 476.

method in placenta previa and eclampsia, and stated that in all cases in which there were no labor pains or partial dilatation of the os uteri before he attempted delivery, he had not lost a single case. This certainly marks a great advance over the older methods of treating these great complications of pregnancy.

Since the introduction of aseptic methods of operating an expedient in cases of contracted pelvis devised over a century ago, by a Frenchman, M. Sigault, symphysiotomy has been revised, and is being largely practiced with increasing amount of success. An able paper on this subject was read at the last meeting of the Society by Dr. Horace Fox, of Philadelphia. Dr. Robert P. Harris, of Philadelphia, the well-known statistician and recorder of the Cæsarean and Porro operations, is now enthusiasticially in favor of symphysiotomy, the mortality of which according to the authority in the last seventy-five cases has been less than 10 per cent. In one of the recent cases in the State of Washington a child of fifteen pounds in weight was delivered by this method which only a few years ago might have been sacrificed. Symphysiotomy may be an operation of election or of necessity; the former when the patient is seen during the progress of pregnancy; the latter when the obstetrician is called in to attend the case after labor has been initiated. The simplicity of the procedure as compared with the Cæsarean section, or any mutilating operation, and the brilliant results obtained by it with proper management, certainly warrant its general adoption in appropriate cases. The method of performing the operation is given by Professor Farabœuf as follows:

"The woman is placed in the dorsal position with the thighs abducted and flexed upon the abdomen and held in that position by two assistants. The pubic region is shaved and this, with all the adjacent parts, is washed first with soap and water, then with sulphuric ether and finally with a solution of bichlorid, or of biniodid of mercury (1-2000). The patient is then fully anesthetized, catheterized and a vaginal douche given. The length of the incision varies with the length of the symphysis in different subjects and must be made, vertically, midway between the two spines of the pubis beginning at the level or a litttle above the superior border of the symphysis and descending to its inferior border, deviating in the neighborhood of the clitoris without touching the superior part of the vulva. Then cut through all the soft tissues down to the cartilage and do not stop to seize any bleeding vessels. Then upon the index acting as a guide, with the scissors divide the fibro-cartilage at the level of the anterior surface and superior border of the symphysis. Then we make two small incisions transversely beginning at the median line close to the superior border of the symphysis in such a way as to cut through the aponeurotic tissues in order to make a passage for the index, which is then introduced along the posterior surface of symphysis. The finger then feels very well the posterior prominence of the fibro-cartilage of the symphysis. Left in this position it serves as a protection to the organs lying posterior to the symphysis. With a straight scapel, begin cutting the cartilage from before backward and from above downward and finish the section by means of a blunt pointed bistoury. At the moment of cutting through the sub-pubic ligament by means of a sound introduced into the bladder, an assistant pulls the urethra out of the way. The incisions through the cartilage are kept up as long as the knife continues to creak, for the latter indicates the resisting cartilage and ligaments giving way. The operator feels the structures slowly giving way, and, finally, when all is cut, the iliac bones in a measure separate. The assistants now practice slow and progressive abduction of the thighs. The surfaces of the divided cartilage separate from each other and we are thus enabled to introduce between them one or two fingers, according to the degree of separation. Experience teaches us that no damage to the sacro-iliac articulations can be brought about by a separation of 7 centimeters. The separation can be brought about by the operator himself with the assistance of the écarteur designed by Prof. Farabœuf. When that degree of separation which the operator deems sufficient is obtained the assistants must be warned not to move, but to hold the limbs in that position thus attained. A tampon is placed in the wound, and this may be either a sponge, absorbent cotton, or iodoform gauze. The operation being completed, we now proceed to the extraction of the fetus. The extraction of the fetus is done artificially. We apply the forceps according to classical rules, *i.e.*, on the parieto-malar region of the flexed head. We pull and the head easily descends, separating the pubis as it advances, provided the latter separation have not been sufficient. If any great resistance is experienced, we must not exercise too much force, but continue to separate the pubis to the limits allowable. As the head descends transversely in the excavation we must subject it to a rotary movement so that it may pass through the inferior muscular and osseous tracts. Here a most important maneuver, advised by Dr. Varnier, must be resorted to in order to avoid the many injuries to which the anterior vaginal wall is liable in the hands of inexperienced operators. If we examine the vulva and soft parts while the iliacs are separated, we find that they no longer present an orifice, longitudinal from above downward and from before backward, but one which is stretched transversely, with a large transverse axis, and whose superior part now lacks support, since the bones are separated. The head, which has been subjected to the rotary movement above mentioned, now presents its largest diameter longitudinally to the largest diameter of the orifice, which is directed transversely. The head presenting itself in this position, any effort to extract the fetus would undoubtedly produce rupture of the vulva and of all the soft parts, where support is lacking, *i.e.*, where the pubis has been separated. A tear of the anterior vaginal wall is a most inevitable result. In order to obviate this Dr. Varnier advises the following method of procedure which is most simple: When the head has effected its rotary movements the assistants approximate the thighs, thus causing the separated iliacs as well as the transversely stretched vulvar orifice to resume their normal position, and the head as in any normal confinement is delivered without producing any injury to the inferior osseous and muscular straits or vulvar orifice. The operation is now terminated as to its essential parts. The umbilical cord is tied or compressed and divided, after which the new-born child is given to an assistant or nurse. A vaginal injection is now given and artificial delivery of the placenta is performed. The vagina being well packed with iodoform gauze, we next devote our whole attention to the pubic wound. The tampon which was previously placed in the wound is removed and the wound is irrigated with

a 5 per cent. carbolic solution, or biniodid of mercury (1:2000). The assistants approximate the iliacs by continued pressure on the hips, and the operator proceeds to suture the tissues with two or three buried sutures and as many superficial ones to keep the parts in perfect apposition. The wound is then covered with iodoform gauze and antiseptic absorbent cotton. A tight bandage is then placed around the pelvis and this covered over with a second one in the form of a T. A third bandage intended to give support is then applied, and for this plaster of Paris is used. We must apply this in oblique directions so as to leave the pubic region free, and so allow freedom for future dressings. These latter dressings must be renewed very often, at least twice a day, because they are always soiled during micturition. The vaginal dressing may be allowed to remain for two or three days, as it insures the perfect antisepsis of the vagina, and thus we can dispense with the injection which would otherwise be necessary during this period. It is necessary also that the limbs should be immobilized by strapping them together. Of course, under these conditions, it is difficult to give injections, so that it is quite sufficient to wash the vulva after each micturition. About the eighth day the wound has become cicatrized. Often enough you will find that edema of the pubes has caused the sutures to cut through the tissues. These may be taken out at the rate of one or two a day."

Now the merit of this operation is that it saves the child with a minimum risk to the mother. Notwithstanding the operation has sometime to be hurried so as to complete it before the child has been naturally delivered, I look upon it with more favor than the Cæsarean section or craniotomy.

I find that I have dwelt at such length upon the operation just referred to that I have no time to discuss delayed labor due to unusual presentations or positions of the fetal organism. In occipito-posterior position it has lately been advised to manipulate the head before the second stage has begun, so as to convert it into an occipito-anterior position. The change was advocated by Baudelocque, Dewees, Hodge, Meigs and others, Dewees going so far as to say that "a physician was incompetent to practice midwifery in the best manner who could not detect and change the malposition of the head and thus abridge by several hours the misery and pain of his patient." In my own experience I have not always found this an easy thing to do. With present methods of securing asepsis this method of changing vertex posterior into vertex anterior positions should be more commonly practiced, or at least attempted.

In the treatment of many of the mechanical causes of delayed labor due to foreign growths in the uterus or vagina, and in the conditions complicating labor, such as ruptured uterus, hematoma, etc., and some of the sequelæ such as pelvic abscess, pus tubes and uterine sepsis, as much technical knowledge, special training and sound judgment are required as are demanded in any other department of medical science. An encouraging amount of progress toward the satisfactory solution of these many unsettled questions of practice, is shown by the proceedings of our special societies and the pages of our medical journals. The scope of the questions suggested by these topics, goes beyond my present opportunity and I find that I have no time to devote to the consideration of these important problems and the manner in which they are being solved. I would only make a plea not only for careful diagnosis but also for more individualizing of patients in deciding questions of prognosis and treatment, and not too much zeal for manual and mechanical interference.

ORIGINAL ARTICLES.

FIBROID TUMOR OF THE UTERUS: DIAGNOSIS.

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A knowledge of the existence of a fibroid tumor of the uterus may be gained by the diagnostician by first obtaining the symptoms as appreciated by the patient, the subjective symptoms; and further by acquainting himself with the actual physical changes by direct personal examination of the patient, the objective symptoms.

SUBJECTIVE SYMPTOMS.

Pelvic Symptoms.—Among the early local symptoms of fibroid tumors of the uterus may be enumerated an irritable bladder amounting frequently to positive dysurea; rectal pressure; sensation of pelvic fullness; low backache or sacralgia, and frequently pain on cohabitation. These symptoms are all produced by a gradually enlarging uterus, and resemble many of the pelvic disturbances of early pregnancy, from which they must be differentiated. As the tumor enlarges the sensation of fullness extends to the lower abdomen, the pressure on the nerves to the lower extremities causes pain in the line of the nerves on the anterior or posterior aspect of the thigh, or on both. Even edema of the extremities may occur from pressure on the veins extending to them, and the appendages are frequently pressed upon, resulting in severe pain on one or both sides, while as the tumor begins to fill the abdomen symptoms of painful pressure on many or all the important organs of the pelvis will be experienced.

Symptoms due to Functional Disturbances.—The most important symptom under this head is that due to the disturbance of the function of menstruation. In 75 per cent. of all fibroid tumors of the uterus the menstrual flow is increased, on account, 1, of increased area of the endometrium due to interstitial enlargement of the uterus, 2, of increased vascularity of the uterus due to the demands of the hypertrophied tissues, and 3, to the venous blood congestion due to pelvic pressure. In a large majority of cases pain is an accompanying symptom. This dysmenorrhea is caused, either by the abnormal contractile power of the changed uterus, by submucous projections into the uterine cavity, exciting painful contractions of the organ, or by a frequently accompanying endometritis. The development of the tumor influences decidedly the change of the menstrual function. In the early stages of the fibroid the patient will notice but a slight lengthening of the menstruation, but as further development is made the quantity of the flow will be increased. This changed condition, while at first it may attract the attention very slightly, as it gradually increases, will at last convince the patient that something serious is afflicting her. The flow will increase rapidly, not only in length of period, and in quantity at a given time, but finally it will frequently become irregular and occasionally almost continuous. At the

same time pain will often gradually develop, so that with the exhaustion of depletion will come the agony of physical suffering. These pains if caused by endometritis, will be of a dull aching character, accompanied occasionally with slight uterine contractions; if caused by the effort of the uterus to expel submucous masses or polypi, it will be like those accompanying the uterine expulsive pains of a miscarriage or confinement; if caused by a pressure of the inordinately congested hypertrophied uterus upon the tubes and ovaries it will be severe and of an almost continuous character in the ovarian regions.

The function of the bladder suffers from direct pressure of the enlarged uterus, or from a subperitoneal enlargement. Frequent urination will first be noticeable, while the tumor is yet small, and later painful micturition, with severe lasting pain in the bladder, as a direct result of traumatism produced by the encroachments of the uterus. Complete stoppage of the urine and painful distention of the bladder may finally occur from impaction of the increasing tumor.

The function of the rectum is frequently impaired by direct pressure of the tumor upon that organ. Obstinate constipation will be complained of, while the interference of the tumor with the circulation will favor the development of hemorrhoids and their painful symptoms. Temporary impaction of feces in the large and small intestines occur as a direct result of the pressure of a large tumor.

Deformity Produced by Fibroids.—One of the most embarrassing symptoms to many patients, who are afflicted with fibroid tumors, and frequently the first to attract their attention, is the change in the contour of the abdomen, which is enlarging. Upon closer observation and examination of the lower abdomen, they discover the unwieldly mass, the tumor, which, as it gradually increases in size, produces a deformity that no device can conceal, while the patient, in order to maintain an upright position, must throw her shoulders back in a manner to make the tumor appear most embarrassingly conspicuous.

General Constitutional Disturbances.—Reflex nervous disturbances are early symptoms in many of these cases. Nausea, palpitation of the heart, indigestion, gaseous distensions of the bowels, flashes of heat due to vasomotor disturbances, headache, dizziness, occasionally spasmodic cough and all the symptoms accompanying nervous storms, irritable temper, despondency, and lack of control, finally developing into typical hysteria. These symptoms are precipitated ordinarily by irritation caused by the long-continued local disturbances already described, and by loss of blood due to excessive menstruation.

Anemia naturally, in a large number of cases, becomes a conspicuous subjective symptom. The patient will complain of loss of flesh, her skin has become pale, lips pale and blue, muscles loose and flabby. She tires easily, and all exercise induces shortness of breath and heart palpitations. Frequently it is necessary to remain in bed a large part of the time from weakness, which is much more pronounced immediately following the great waste of the menstrual period.

OBJECTIVE SYMPTOMS.

Diagnosis.—Under objective symptoms methods of diagnosis will be considered. Objective symptoms are determined, and their diagnostic value recognized, by pelvic examination, abdominal palpation and auscultation, and general examination.

Pelvic Examination.—The patient should be placed on her back on an operating chair or table, in the recumbent position, with limbs well flexed upon the abdomen, and feet supported by short stirrups. The clothing should be loose. After the vagina has been well douched with an antiseptic fluid, the examiner should proceed to make a bimanual pelvic examination. The index finger of the left hand is employed to make the preliminary vaginal examination, the right hand being left free for external manipulation. The cervix is first sought and its location often gives one important information. If it is in normal position, well up in the vagina, within an inch and a half of the sacrum, any enlargement of the uterus is liable to be uniform, or any growth is located anteriorly in the body of the organ. If it is low in the pelvis and anterior to its natural location, any enlargement of the uterus is quite likely to exist in the fundus, or the uterus is retroverted. If it is anterior to its normal position and is crowded well up behind the symphysis, the tumor is liable to be located in the posterior wall of the uterus, very low. If it is drawn well up posteriorly, almost if not quite beyond reach, the tumor will usually be found in the anterior uterine wall. The location of the cervix, however, is of small importance when considered alone.

Bimanual Examination.—By combining with the digito-vaginal examination, external palpation with the hand, a knowledge of the general contour of the uterus can be at once definitely obtained. If it is enlarged, that fact is apparent; if there are any irregular projections or developments from any portion of its walls into the abdominal cavity, or into the broad ligaments, they can be recognized; and if it is enlarged so as to produce a prominent tumor a knowledge of its source of development can usually be determined by taking into consideration its relation to the cervix. If the tumor is of a subperitoneal variety, its relation with the cervix and uterine body will indicate its source of development. If the cervix is thin and stretched over a projecting mass, protruding through it from the uterine cavity, the knowledge of a uterine polypus or a submucous tumor is imparted. The sensation of solidity or fluctuation of the growth is usually satisfactorily obtained by this examination. Thus, the size, contour, consistence, direction of development and variety of tumor may all be determined by a simple bimanual pelvic examination.

A bimanual examination, however, is frequently unsatisfactory, until one has resorted to a rectal examination, combined with the abdominal palpation, and made either with or without an anesthetic. This latter enables one to examine the posterior aspect of the uterus much higher than is possible per vaginam, and with less intervening tissue. An anesthetic, when given, permits of a much more prolonged examination, renders the procedure painless, and eliminates the muscular fixation and strain which is inseparable from an examination without it. The abdominal muscles, the sphincters of the rectum and vagina are relaxed, allowing much freer and more complete exploration, when an anesthetic is employed.

Instrumental Examination.—Pelvic examination for fibroids is often not complete without instrumental examination. While a speculum is not often needed as a direct means of diagnosis, in these cases, it is frequently required to aid in determining sec-

ondary changes which may have occurred in the vagina or cervix uteri. It may also be employed to explore the cervix where the vaginal vault has been distorted by a complicated tumor, before using the uterine sound. The uterine sound is occasionally used to measure the uterine canal. It may be employed to locate the canal when palpating the uterus for the purpose of ascertaining in which portion of its mass a tumor is situated. And it will also give valuable information in regard to the location and size of submucous fibroids. When a uterine canal is so distorted that a metal sound does not possess the necessary flexibility to traverse its course, an ordinary male flexible bougie, with a bulbous tip, can frequently be successfully insinuated to its entire depth, and give very valuable aid in diagnosis. The uterine dilator is an important instrument in diagnosing the condition of the interior of the uterus. It enables one to explore the cavity of the uterus with the finger and thereby materially assists in revealing the position and character of submucous fibroids.

Abdominal Palpation.—Abdominal palpation and auscultation can best be accomplished with the patient under the influence of an anesthetic. By palpation the tumor can be outlined; any subperitoneal projections noted; its consistency ascertained; abscess or presence of fluctuation considered; its relations to the surrounding organs recognized and the absence or presence of adhesions learned. In auscultation we have an important means of distinguishing fetal heart sounds in the differential diagnosis between a fibroid tumor and a natural or tubal pregnancy.

General Examination.—In the general examination of a patient who has a fibroid tumor, points of change in outlying organs, which may have been the remote result of the tumor and which may have an important bearing on the form of treatment to be adopted, are to be noted. These changes may be found in the heart, the kidneys, the lungs, the digestive tract, the nervous system and the vascular system; but as similar changes may also occur from any form of wasting disease, as diagnostic signs they are not of great importance, and therefore, their consideration here is out of place.

DIFFERENTIAL DIAGNOSIS.

We are often called upon to differentiate between fibroids and the following conditions, which simulate them to a puzzling degree: Ante- and retro-flexions, subinvolution (metritis), cancer, floating kidney, pregnancy, tubal pregnancy, tubal cysts and ovarian cysts.

Ante- and retro-flexions are differentiated from fibroids by the comparative smallness of the uterus, and the lack of characteristic hardness of the fibroid. The sound clears up the condition. If it is that of a normal uterus with projecting fibroid, the mass will be easily palpated in front or posterior to the sound, while if it is ante- or retro-version the sound will follow the canal to the center of the flexed fundus.

Subinvolution (metritis) is distinguished from a fibroid by its history, by its symptoms and by physical signs. The history of subinvolution is that of recent child bearing or miscarriages with subsequent endometritis, while a fibroid seldom immediately follows pregnancy, and when small is rarely accompanied with endometritis. The symptoms of the two conditions differ in the amount and character of the leucorrhea, being profuse in chronic metritis; in the amount of hemorrhage at menstruation, being profuse in fibroids, while in subinvolution it may be absent immediately following child birth for several months, and of a more normal character when it does exist. Subinvolution in physical signs differs from a fibroid in being of a softer character, resembling the normal uterus in being of uniform contour and in containing no distinct centers of development. With a condition of subinvolution will almost invariably be found an accompanying lacerated cervix and frequently a lacerated perineum. Finally, uterine curettement, antiseptics and a restoration of a torn cervix, will cause a subinvoluted uterus to involute to its natural size, while such will not be the case with a similar treatment for a fibroid.

A cancer (uncomplicated) is usually easy to differentiate from a fibroid. Microscopic examination should be made, if practicable, at the earliest possible date. An uncomplicated carcinoma seldom presents a large tumor. If it is of the cervix, a well-defined ring shows the line of demarkation between it and the healthy tissue. An offensive, watery discharge, characteristic of carcinomatous degeneration, is of diagnostic value. Carcinoma of the body of the uterus gives rise to more pain than a fibroma. It, too, ulcerates early, giving rise to the afore-mentioned offensive discharge. The cancer cachexia will also aid in arriving at a differentiation. A carcinomatous tumor is much more liable to give rise to an ascites than a fibroma.

A floating kidney might, under exceptional circumstances, be mistaken for a subperitoneal fibroid. But its position, and especially the discovery of its place of attachment, would dispel all doubt of its being a fibroid. To obtain this knowledge, however, might require a most careful abdominal and bi-manual manipulation.

Normal pregnancy should be differentiated from fibroid tumors first by bearing in mind the subjective symptoms of the two conditions, and second by physical examination. In pregnancy menstruation almost invariably ceases; in fibroids it is almost invariably increased. The history of pregnancy is definite and uniform, with a given size of tumor, while with fibroids the time of growth varies greatly with tumors of the same size. Morning sickness and breast changes are classic symptoms of pregnancy which rarely occur with fibroids. In the physical examination the pregnant uterus is uniform in its development, giving a soft, semi-fluctuation feel on palpation. Fibroids are frequently irregular in outline, and on palpation appear solid and often present distinct centers of hardness. The cervix is soft and patulous in pregnancy, and the neck of the uterus sometimes thin, forming a decided constriction, while in fibroids the cervix is unyielding and the constriction of the neck is absent. The vagina in pregnancy is blue, a rare occurrence in fibroids. Finally, as the pregnancy progresses ballottement, fetal movements and fetal heart sounds remove all doubt of the condition.

Tubal pregnancy would rarely be mistaken for a fibroid of the uterus. It presents many of the signs of normal pregnancy. There is frequently a slight show at menstruation, the tumor is of a semi-fluctuating character, and lies, as a rule, to the right or left of the uterus; while a subperitoneal fibroid, located in the position usually occupied by a tubal pregnancy, would be hard and unyielding. In tubal pregnancy

the normal uterus may be distinguished by a line of demarkation between it and the tumor.

Ovarian cysts are usually easy to distinguish from fibroids by their fluctuation; by the lateral delopment when small; by the slight menstruation accompanying them; by the normal size and depth of the uterus and by the absence of the uterine soufflle distinguishing a fibroid. As a rule, ovarian cysts are of a rapid growth and give a short history, while fibroids are years in maturing.

INTERSTITIAL KERATITIS.

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On account of the transparency of the corneal tissues, enabling us to observe accurately and follow up faithfully any changes which take place in its structure, inflammations of the cornea have for the pathologist more than the usual amount of interest. This is especially so in regard to interstitial keratitis, where the changes are so slow as to be easily followed in part, while some of the phenomena are so completely concealed as to make us even more curious in regard to them. The anatomic seat of the affection is not peculiar to it; the clinical course is, however, and interstitial keratitis presents a well-defined and characteristic picture. In the majority of cases it attacks both eyes, though seldom both at the same time, and usually several weeks, or months, or even years, intervene between the attacks. Owing to this feature the opportunity often presents itself of observing the beginning of the attack in the second eye. The progress of the disease may be very satisfactorily observed as it spreads itself throughout the cornea. In the beginning stages two forms are clinically distinguishable, but these later on can not always be differentiated. In one series of cases the process begins near the center of the cornea and spreads outward toward the periphery, which it usually takes several days to reach. The corneal border may remain quite clear for a time and may appear to be perfectly healthy.

A careful observation of the corneal structures from day to day will reveal the following phenomena: A number of small, dim, grayish maculæ make their appearance near the center and in the deeper layers of the cornea. These spots are not clear-cut opacities, with well-defined borders, but are rather diffuse and gradually shade off into the surrounding tissue. They slowly increase both in size and in number, and finally become confluent, forming a large central patch, or in some cases a more or less opaque circle or ring-shaped opacity. At the same time, by the appearance of fresh maculæ, the infiltrated area extends toward the periphery. By focal illumination it can be seen that these infiltrated patches have their seat in the deep layers of the cornea, while the surface of the membrane is lusterless and dull, because of a very definite stippling from partial loss of its epithelium. In time, generally several days, the infiltrated area reaches the limbus corneæ. The entire cornea is now more or less uniformly white, gray, or even yellow (depending upon the depth of the infiltration), with here and there points of more decided shading, presenting the well-known "ground glass" appearance. Vascularization now begins. Here and there along the corneal margin, as if arising from beneath the limbus, tufts of minute vessels make their appearance. They spring from the deep episcleral network surrounding the cornea and are therefore branches or offshoots of the anterior ciliary arteries. They run parallel to one another in the deep layers of the cornea and on account of being covered by its clouded superficial layers are usually very indistinct. They are hardly to be distinguished as separate trunks with the naked eye, but are readily recognizable by a strong convex glass—say 20 diopters—behind the mirror of the ophthalmoscope. They produce the appearance of congested areas, usually of a dirty red or grayish red hue, which are familiarly known as "salmon-colored patches."

In the second group of cases the affection is first seen at the limbus and spreads inward. At one spot along the corneal margin the tissue becomes lusterless and clouded. On close and careful examination with a magnifying lens the dull area is seen to be deeply situated and to resolve itself into a number of separate parallel cloudy streaks or maculæ. At other spots along the corneal margin similar areas of cloudiness soon appear and push their way concentrically toward the pupillary area of the cornea. At the same time the corresponding portions of the limbus become injected and swollen, and the superficial zone of vessels at the corneal margin begins to develop. As the areas of deep infiltration extend laterally, by increase in number, as well as in extent, until the entire cornea is opaque in its peripheral zone, so do the areas of superficial injection extend in a corresponding manner from the original foci. This development of vessels is confined to the marginal loops of the cornea—those little twigs which extend forward from the posterior conjunctival system to turn on themselves and connect with the anterior ciliary arteries. The entire cornea finally becomes encircled with a raised fleshy ring,-like mass of closely pressed vessels, which stop short, however, just within the limbus. In extreme cases it may actually overhang the limbus, and is sometimes called "epaulet-like swelling" of the limbus. The deep vessels, however, which come from beneath the limbus do not stop short with the superficial ones, but continue in the track of the opacities—which they seem to be following up—toward the center of the cornea. Like the vessels in the first form, these vessels run parallel to one another, are very fine and close together and produce the same dull grayish-red appearance of the cornea. Frequently the vessels do not quite reach the center of the cornea and the pupillary space retains its bright gray look.

It must not be supposed that the abnormal action in interstitial keratitis is limited to the cornea, although in most cases the marked visible changes are corneal. There is no doubt, however, that the corneal phenomena are generally secondary. Berry refers to the affection as a secondary infiltration, depending on foci of inflammation in the neighboring tissues. In contra-distinction to this, however, Von Hippel[1] contends that in some cases the affection of the cornea may be primary and propogate itself backward to the uveal tract. It is possible that in some cases in which the center of the cornea is the apparent starting point of the disease the peri-corneal tissues are affected later, but these cases are not of the usual type. At any rate the point is still unsettled. The absence of active inflammation, abscess formation or ulceration of the corneal tissue, all favor the view of the affection being a secondary infiltration. It is

probable that the iris is always more or less involved, although it may be difficult to determine with certainty on account of the opaque condition of the cornea. After the cornea has regained its transparency it is quite common to find posterior synechia, even when iritis had not been suspected, and also in cases where atropin had been faithfully employed from the start to guard against such a contingency. The mydriatic penetrates the thickened cornea with difficulty and probably reaches the irritable iris in insufficient quantity to exercise its physiologic effects. The pupil consequently remains small. Accumulations of cells are frequently found on the posterior surface of the cornea. It is probable that they are seldom or never entirely absent, though it may require a very careful examination with focal illumination and a magnifying lens to determine their presence. Of course this is only practicable during the stage of resorption. Intra-ocular tension is frequently found diminished. The anterior chamber is often deeper than usual, due to an increased secretion of aqueous humor. These changes with the deposits on Descemet's membrane show that the uvea proper is almost universally involved, although it may not otherwise be clinically demonstrable. Its participation may be extremely slight, or on the other hand so marked as compared with the process in the cornea, that the inflammation assumes the character of an irido-cyclitis. We have all the intermediate degrees between a well marked irido-cyclitis, with a few slight opacities in the posterior layers of the cornea, and the densest corneal infiltration without demonstrable extension backward. Hypopyon is very rarely observed even in the worst cases of iritic and uveal involvement. After the cornea has again become sufficiently clear we frequently see foci of vanishing choroiditis. These manifest themselves by numerous black spots in the anterior segment of the choroid. This inflammation of the choroid is much commoner than generally supposed, because of the difficulty of making an ophthalmoscopic examination during the progress of the disease. We have to wait, therefore, for the cornea to clear up in the resorptive stages. Sometimes we have the opportunity of watching this process of anterior choroiditis in the other healthy eye before the cornea has suffered. In some cases scleritis occurs as a complication, confined to the peri-corneal and preëquatorial zones. It is diffuse, as a rule, and may result in softening and ectasia. In one case which I saw the entire cornea was pushed forward *in toto*, by a stretching of the sclera in the ciliary region. The cornea had regained its transparency almost completely, the anterior chamber was shallow and the eye had become blind from secondary glaucoma. It is probable that in most cases there is a tendency toward involvement of the scleral tissue, indeed, careful observation will often detect a deep peri-corneal injection of a mild type before the cornea shows any opacity. It is usually a difficult task to ascertain if any deep-seated inflammation complicates the corneal trouble. As however, even in the worst uncomplicated cases, the movements of the hand close before the eyes should be visible, the inability of the patient to see such should lead one to suspect it. The visual acuity should correspond to the condition of the cornea. The field of vision also should be of normal extent. Therefore any limitation of it would indicate some deep complication.

Interstitial keratitis may be accompanied by more or less marked symptoms of irritation, as lachrymation, pain, photophobia, redness and rarely swelling. As a rule they correspond to the amount of vascularization. In some cases they are extreme, in others hardly noticeable, and the patient only seeks medical aid on account of the disturbance in vision. In mild cases this may be so slight that no inconvenience is caused until the second eye is attacked. In severe cases, and in the later stages of some cases with a mild beginning, the disturbance in vision may be so pronounced that movements of the hand can only be recognized a few feet, or even inches, distant.

The course of the disease is extremely chronic. As a rule it is protracted for months and even years. The two eyes are seldom attacked simultaneously, but as before mentioned, a long interval usually elapses. Schmidt-Rimpler[2] even mentions a case observed by him in which one eye had been healthy for more than a year when the other was attacked. It is rare indeed that both eyes are not attacked at some period of the disease. In mild cases the duration may be short and the changes not marked. A few maculæ may make their appearance, remain a short time, and gradually subside again, without any marked inflammatory symptoms. The opacity may remain confined to the marginal zone, or even to the particular section in which it started. These mild cases may clear up so completely that hardly a trace is left of the disease. Still it is rare that, on a thorough examination by oblique illumination and a magnifying lens, no trace of the disease is discovered. Unfortunately, however, all cases do not run this simple benign course. The intensity of the process and amount of infiltration may be such that the corneal tissue becomes softened, and, yielding to the intra-ocular pressure, becomes ectatic and permanently opaque. As already stated, the surrounding sclera may also suffer in this way. Organization and shrinking of the exudate, with consequent flattening of the corneal surface and dense opacity of its tissue is also to be dreaded in these severe cases. Fortunately such deplorable cases are rare. Between these two extremes we have all grades of intensity. While the physician may find his resources taxed to the utmost to conserve the flagging courage of his patient, on account of the long duration of the disease, he can on the whole give a good prognosis so far as the ultimate recovery of vision is concerned. While a certain amount of vascularization is necessary for the resorption of the exudate, still, when extreme, the vascularization itself is to be dreaded on account of its failure to disappear completely. It is worthy of note that keratitis interstitialis never results in destruction of tissue, so that neither corneal abscess nor ulceration is to be feared.

The pathology of the disease is still somewhat unsettled. The opportunity for making a post-mortem examination has occurred in but a few cases, and in these the disease was in its advanced stages. We are still in doubt, therefore, in regard to the changes at the very begining of the disease. Von Hippel[1] (speaking with reference to the eye alone) states that parenchymatous keratitis may be primary, *i. e.*, have its origin or point of distribution in the cornea or sclera directly adjoining, from which it is propogated to the uveal tract, or it may be secondary, *i. e.*, first appear in the ciliary body or anterior choroid or iris, from which it extends forward to the cornea. The exten-

[1] E. Von Hippel: Ker. Parenchymatosa Graefe's Archives XXXIX, III, p. 204.

[2] Schmidt-Rimpler Ophthalmology and Ophthalmoscopy, Translation. N. Y., 1889, p. 412.

sion occurs by way of the ciliary vascular system. The microörganisms are passed through these small vessels, the lumens of which they may partially block, or the vessel walls themselves become affected, and the resulting impeded circulation is followed by failure of nutrition of the corneal tissues. Leucocytes in great numbers make their way through the vessel walls and the corneal tissue becomes infiltrated and loses its transparency. He cites Wagenmann's experiment in support of his views. The latter cut through the two long ciliary and in part the short ciliary arteries. Following this a grayish opacity developed at the corneal margin and overspread the corneal surface. A dense vascularization soon appeared along the border of the cornea and gradually spread inward. This in turn was followed by a gradual return of more or less complete transparency in the corneal tissue. These three stages of infiltration, vascularization and resorption, correspond with the phenomena observed in the actual disease in man. According to this the affection has its seat primarily in the coats of the blood vessels, the corneal trouble being a direct result.

In an autopsy made by Krükow[3] there was vascularization of the deep corneal structures, the vessels had adventitial membranes and contained extremely large numbers of white corpuscles. Mayer[4] examined a case in which the cornea was much thickened. The deep layers were infiltrated with large round and polygonal cells, which in places were collected in nodules. There was congestion of the deep tissues with perivascular cell aggregations. The epithelium of Descemet's membrane was thickened and covered by masses of cells. Nodular masses also appeared in the iris. The anterior portion of the sclera was thickened, vascular and infiltrated. Choroid normal. The cell accumulations resembled tubercles but no giant cells were visible. Fuchs[5] saw a case where the continuation of the infiltration into the deep layers of the cornea extended into the ligamentum pectinatum, iris and ciliary body. He found these parts filled with small-celled nodules which much resembled tubercles, but no tubercle bacilli or microörganisms were found. There is a unanimity of opinion with regard to vascularization and cell infiltration, but the initial changes remain unknown.

The etiology of interstitial keratitis is as a rule not obscure. The underlying cause in the majority of cases is syphilis of the hereditary type. Noyes contends that some cases also owe their origin to acquired syphilis. He quotes Horner[6] in support of his views. Many cases are undoubtedly scrofulous, a few malarial, and probably rheumatism and gout furnish a small quota. Interstitial keratitis belongs to the later manifestations of hereditary syphilis. Hence it often appears as late as the age of puberty and but rarely in infancy. The vast majority of cases occur between the sixth and the twentieth years. To Hutchinson is due the credit of delineating the facial characteristics of hereditary syphilis. What were formerly thought to be evidences of a scrofulous taint, we now know to belong to syphilis. Patients with hereditary syphilis will almost always present some or all of the following peculiarities: The forehead is prominent, with overhanging frontal eminences. The nose on the contrary is flat, with a sunken bridge, producing, on account of a more or less degree of epicanthus, an apparent increase of distance between the eyes. The upper jaws are ill developed and the teeth will require careful inspection. The upper central incisors are ill developed. They may be stunted as a whole and are abnormally shaped. The cutting edge is short and shows a semilunar indentation. Fine linear cicatrices exist at the angles of the mouth. Old eschars may disfigure the hard and soft palates. Numerous, small, hard, painless, glandular enlargements can be made out in the cervical regions. Nodular, hard, painless swellings occur on the long bones, especially those of the leg. These patients may be otherwise in an apparently robust condition.

As might be supposed from a consideration of the causes, treatment is both local and general. The constitutional dyscrasia must be combatted, although it must be admitted that in constitutional syphilis the results of medication are not encouraging. Mercurial treatment is much less effectual than in the acquired form, and its use should be restricted to the severe cases. It may be given by inunction, using the oleate of mercury 20 per cent. or the usual blue ointment. In children the internal administration of corrosive sublimate (1 to 4,000, a teaspoonful three times a day) is useful. The condition of the gums should be carefully observed. In the milder cases remedies containing iodin appear to be more useful. Syrup of the iodid of iron, cod-liver oil with iron, Blancard's pills of iodid of iron, are all useful. Small doses of calomel 1-10 gr. three times a day have also proved valuable. In weak and cachectic individuals general tonics may be required, as quinin, iron, nux vomica, etc. Errors of digestion must be corrected. The patient should have an abundance of good, plain food, and should be encouraged to live as much as possible in the fresh air. In the local treatment we endeavor to combat the uveal complications, and later on to encourage the rapid and complete clearing up of the corneal opacities. The moderate use of atropin is always indicated in the early stages: a ½ to 1 per cent. solution may be instilled once to four or five times daily. Formentations with hot water or chamomil infusion often ameliorate the symptoms of irritation. They may be employed for twenty or thirty minutes at a time, several times during the day, until the acute symptoms are over. Later the irritant remedies may be tried cautiously, but *no astringent or irritating remedy should be used while any signs of irritation exist.* Calomel, Pagenstecher's ointment, laudanum, are all good. The yellow ointment may be rubbed in well once daily. These tend to promote absorption if properly and timely used. To the same end Schweigger[7] recommends the employment of massage of the cornea. Of course at all times the eye should be properly protected from strong light by the use of colored glasses. In severe cases, indeed, the patient should be confined to his bed in a darkened room. Treatment may be demanded for months or even years, especially the use of means to clear up the cornea.

[3] Zehender's Monatssch. f. Augenheilkunde, 1875.
[4] Inaugural dissertation: Göttingen, 1887.
[5] Fuchs Text-book, American Ed., 1892, p. 172.
[6] Jackolowlcena Pulcheria—Ueber Keratitis interstitialis diffusa, Zurich, 1873.

The Bicycle.—The bicycle is still the topic of discussion in many a medical meeting, and a note of warning is constantly sounded against the wheel and its use by persons with any heart trouble. Physicians abroad are almost all devoted to the wheel as a health-giving pastime, but they all assert that rowing is superior to it in every way, one reason being the lack of dust which bicyclers inhale into their lungs.

[7] Schweigger—Handbuch der Augenheilkunde, 1893, p. 270.

A WORD ON THE MODERN USE OF THE TERMS INFECTION AND CONTAGION.

Read at the Second Annual Meeting of the American Academy of Railway Surgeons, held at Chicago, Ill., Sept. 25-27, 1895.

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With the advance of the germ theory and its practical application to disease, no small amount of confusion has arisen in our text-books in the use of the word infection.

Dunglison's dictionary, published in 1860, defines the word infection as synonymous with contagion and defines contagion as being the transmission of a disease from one person to another by direct or indirect contact. It also states that the term has been applied by some to the action of miasmata arising from dead animal or vegetable matter, bogs, fens, etc. It says that contagious diseases are produced either by a virus capable of causing them by inoculation, as smallpox, cowpox, hydrophobia or syphilis, or by miasmata proceeding from a sick individual, as in plague, typhus gravior, measles, scarlatina, scrofula, phthisis pulmonalis, or cancer.

By these definitions, you will readily see that the same term is applied to widely different conditions and we are almost justified in saying diametrically different causes.

Thomas, in the edition of his dictionary for 1886, defines infection as being "the communication of a disease by personal contact with the sick or by means of effluvia (whatever that may be) arising from the bodies of the sick; contagion; the transmission of disease from one individual to another of the same species, or from one animal to another of a different class." He concludes his definition by saying the term is sometimes used as synonymous with contagion or agent by which a communicable disease is conveyed.

In the same dictionary he defines contagion as "the communication of a disease by contact or by inhaling the effluvia from one already effected—often used as synonymous with infection." Here, again, we have diametrically different conditions defined as synonymous terms.

Keating, in his edition of 1892, says that infection is the contamination with a poison or virus which has the power of invading and multiplying in living tissues. Communication of disease; contagion; atmospheric contamination. He also defines contagion as being the process by which specific diseases are communicated from person to person. Specific disease may be communicated by contact or by near proximity of the sick to the well, when the process is termed direct contagion. He concludes by saying that if communicated indirectly, by means of clothing, food, etc., infection is the more correct term.

In the 1893 edition of Dunglison's dictionary, we find infection defined as material essential to, and concerned in, the propagation and spread of communicable diseases. The process by which disease is communicated to an individual by diseased germs from the external atmosphere. In the same edition the definition of contagion varies little from that given in the edition published more than a third of a century ago.

Prof. Pepper, in his work on diseases of children published in 1874, defines scarlet fever as being an epidemic and contagious eruptive fever; and yet we all know that scarlet fever will be communicated from one person to another without the necessity of direct contagion or personal contact. In the same work he states that syphilis may be contracted by direct contagion. Here we have the same definition given in two diseases. The one, syphilis, we know is never contracted except by direct contact, and the other is a disease which is seldom contracted by direct contact, but the germ of which is carried in the air, and if carried in the clothing must be inoculated and thereby the disease introduced into the circulation.

Roberts, in his Practice, published in 1874, defines measles as a distinctly infectious disease; which, according to the definition given to infection by our dictionaries, would mean that it is absolutely necessary to have a healthy person come in direct contact with another afflicted with measles in order to contract the disease, and I am sure there is not a practitioner here this afternoon who will admit that that is necessary. Coming down to our more modern authors, Whittaker, of Cincinnati, defines chicken-pox, in the American Text-Book of Theory and Practice of Medicine, published in 1893, as an acute infection of children. Now, what are we to understand by this? If infection means contagion, and contagion means contact, are we to understand that chicken-pox is transmitted from one person to another only by actual contact? If the definition is intended to mean this, certainly clinical experience proves the contrary, and it can be readily demonstrated that actual contact is not necessary to convey chicken-pox from one person to another. In the same volume, the same author defines smallpox as being a highly contagious disease; and yet, we know that smallpox will be conveyed from one person to another in exactly the same manner as chicken-pox is conveyed from one child to another; yet in the one instance it is called infection and in the other instance contagion. In the same volume, Thompson defines syphilis as a chronic infectious disease; but who is there to-day who will not admit that acute syphilis is only contracted by direct contact? Again, Bartholow, in his Practice, published in 1880, defines hydrophobia as a specific disease due to the inoculation of a poison. If this be true, why should not the same definition be applied to syphilis, when we all know that it is produced by the inoculation of a specific poison?

We might multiply these quotations indefinitely. Our text-books and dictionaries are filled with contradictory definitions of the same conditions, and is it any wonder our students come to us to define what we mean when we refer to infection and what somebody else means when he speaks of contagion? By these few quotations from accepted authors it is evident that the same terms are used in medicine for entirely different conditions, and applied to diseases which are contracted under, we might say, almost diametrically different circumstances. Owing to this Babylonic confusion of terms, sanitarians in making laws to cover the sanitary condition of States and municipalities, have included both infection and contagion without endeavoring to define what is meant by either, so that the transgressor can not escape on a technical definition of terms. It seems to me, however, that the day has come when a more distinct and definite nomenclature should be applied, and terms should be used which have a definite meaning and which indicate certain definite conditions. Especially

is this true in surgery, where accuracy of language is so essential in conveying a proper idea of the meaning intended by the writer.

The generally accepted term "infection," as applied in surgery, means the introduction into the human economy of some microörganism by inoculation or direct contact. Clinical experience, as well as experimental research, have long since taught us that the infection of a wound by pus microbes means the development in that wound of pus; and if that means anything it means that a specific microbe has been introduced into the wound, and there has found a suitable culture medium for multiplication. We do not as surgeons expect a patient to become infected with pus microbes by reason of the presence of another patient in a distant part of the ward suffering from pyemia, so long as proper care is taken to avoid the conveying, by actual contact, of these microbes. But does that hold good in cases of measles, smallpox, scarlet fever or whooping cough? Certainly not. The presence of a case of any of these in a ward, without actual contact, is liable to produce an epidemic, not from direct contact but from what our old authors called "infection of the air," which is an entirely different method of carrying these diseases from that by which pus microbes are conveyed from one person to another, but which is called infection.

Having briefly reviewed the confusion in the use of the words infection and contagion in medical literature, let us turn for a moment to surgical literature and observe the conditions under which these terms are used in it.

Senn, in his "Principles of Surgery," in speaking of tetanus says that the infectious nature of the disease was well known and established before the discovery of the bacillus tetani. In speaking of the etiology of this disease, he says further that the bacteriology of tetanus is the essential cause of the disease; the remaining causes are accidents, the condition which results in the formation of an infection atrium. In speaking of this infection atrium he says that it is a well-known clinical fact that punctured, lacerated and gun-shot wounds of the hands and feet are most liable to be followed by tetanus. Again, the same author, in the same work, in speaking of pyemia, says that it is a general disease caused by the entrance into the circulation of pus or some of its component parts. In referring to the bacteriologic experiments of Klebs, he says that in his experimental research during the Franco-Prussian war he found this microbe invariably present, notably at the primary seat of infection. In speaking of the etiology of this disease, he says that the location and anatomic structure of the tissue in which the primary infection has taken place exert an important influence in the production of the disease. From these and many other statements by the same author, it is clearly shown that the word infection is used to indicate the introduction into the economy through some form of wound, or some form of bacterial or chemic poisoning, as the case may be. If this be true, then how are we going to harmonize the use of the same word to imply the carrying of a disease in the air and its introduction into the human economy, without a wound of some kind, as is the well-known fact in measles, scarlet fever and diseases of that class?

In "Tilman's Principles of Surgery and Surgical Pathology," by Rogers, Published in 1894, we find the author speaking of the existence of infectious diseases of wounds, and he says that these infectious wound diseases are all caused by bacteria, and gives as examples anthrax, hydrophobia, glanders, etc., which are diseases communicated from animals to man. Actinomycosis, tuberculosis and syphilis, he says, are also due to infection by microörganisms. He further states that bacilli are capable of gaining access to the tissues or fluids through any wound, even the smallest interruption in the continuity of the skin or mucous membrane.

Warren, somewhat in contradistinction to other modern authors, refers to contagion and uses it as identical with infection. In referring to erysipelas, he says it is one of the most frequent of traumatic infective diseases, and further on states that the most frequent point of entrance of the virus is through a wound. In speaking of erysipelas, he says that the occurrence of several cases of the disease in a certain locality, or in a hospital ward, is not necessarily evidence of its contagiousness, for such a concurrence of events may be due to a common cause from which each case has taken its origin. Again, he says: "There are, however, undoubtedly cases which are contagious in the highest degree." The same author in the same work, in speaking of hydrophobia, asserts that it is a disease caused by inoculation, and speaks also of the propagation of syphilis by inoculation. Tetanus, he says is an infectious disease, and yet, it has been clearly demonstrated that tetanus can be produced by inoculation just as well as hydrophobia.

In the "American Text-book of Surgery," published in 1892, the author divides this subject into three principal divisions, and speaks of mixed infection, which, he says, includes all the ordinary septic wounds and likewise those special wounds which are, at times, accompanied with marked tendency to spread inflammation and gangrene; second, the chemic poisons, the result of bites of insects and reptiles; third, microbic infection, such as rabies, glanders, etc.

From these few quotations it will be observed that authors differ very much as to the use of these terms and their application to certain conditions. It is the varied use of these terms and the ambiguous meaning attached to them, that are daily causing confusion among students of both medicine and surgery. It seems to me there should be a revision of our nomenclature and that proper terms should be employed to convey definite meaning. For example, some authors refer to primary infection as being the primary point at which some microbe has entered the economy, and secondary infection as meaning the second atrium occurring in the same person, instead of using multiple infection to show that there are multiple atria of the same germs. For example, in pyemia we have the absorption of pus from a primary point of infection, and we have a dozen or more atria of pus microbes forming as many different abscesses throughout the economy. This is strictly multiple infection and not primary, secondary or tertiary, which is an entirely different thing. Primary infection occurs where there is an introduction of a certain microbe, such as pus, and secondary infection occurs where there is the addition of another microörganism, for example tubercular bacilli, producing mixed infection; yet we find authors using these terms synonymously, and thus confusing students as to the real meaning to be conveyed.

The complicated nomenclature in reference to infection, contagion and inoculation has long since

impressed the author with the importance of having a clear and more specific use of the terms than we have at present. Since I commenced to prepare this paper, and after giving the matter more systematized thought, I am astonished at the irregular use of the same terms in our various text-books. While I feel that I have given the matter but incomplete investigation, yet I am fully convinced that it is high time something should be done to bring order out of chaos. At present we do not feel justified in recommending to the medical profession what particular terms should be used in this connection, but we would recommend that a nomenclature be adopted and terms used that will be definite and which will enable a writer to state clearly what he wishes to convey and will enable the reader to understand without question what is meant.

In closing this paper I would suggest that the Academy appoint a committee of three to consider this question and that a request be sent to the proper officers of the AMERICAN MEDICAL ASSOCIATION and the American Surgical Association to appoint a committee of three from each of their bodies with instructions to form a joint committee from the three associations whose duty it shall be to consider this question and recommend a nomenclature that will be more exact and modern.

It was moved by DR. REED and seconded by DR. L. E. LEMEN, Division Surgeon U. P. R'y, Denver, Colo., that those present who are not Fellows of the Academy be invited to participate in the discussions of the papers. Carried.

DISCUSSION.

DR. H. J. MAYNARD, of Wyoming—I think there is no discussion possible in this case, because I agree with the Doctor that there is great confusion that ought not to be allowed to exist. There has been for years a mixing of terms. You write one word and you are understood, perhaps, to mean another: you write the other and you are understood to mean the first. I think attention should be called to the matter by the different medical societies of the country, so that order may be brought out of chaos in the literature of the profession for the years to come. The suggestion is a good one and well taken, and I do not see how we can discuss it: we certainly can not quarrel with it, and can not object to it.

DR. L. E. LEMEN, of Denver—I am a great deal like my friend from Wyoming; I simply rise to compliment and agree with Dr. Reed in his paper and second his suggestion for a committee of three to be appointed. I know whenever I use one term and mail my communication I am very sorry I did use the other term.

DR. WM. THOMSON, of Philadelphia—The literal meaning of the word contagion is "to come in contact," and I think if we would adhere more strictly to the literal meaning of those two words, not that I can give you a literal explanation of the meaning now, though I have looked it up several times, it would be of great assistance to us. If a disease we have contracted by coming into actual contact with the wound, like syphilis, would be classed as contagious, and the other as infectious, I think it would help us out materially. The literal meaning of the word contagious is, "coming in contact," and I think everybody will understand, if you come in actual contact with the sore, as you do in syphilis, it would be a contagious disease.

DR. C. B. KIBLER, of Corry, Pa.—It seems to me as if the suggestion offered by the author of the paper is a very wise one and should be considered: that is, that a committee of three be appointed to confer with the other societies on this question. I therefore make such a motion.

DR. E. GRISWOLD, of Sharon, Pa.—The paper seems to deal with facts and the statements the doctor makes are, I consider, facts, and there ought to be a differentiation between the meaning of infection and contagion. Now, I have differentiated in my own mind, but I have never seen it done in the literature of the profession, or in text-books; and I believe it is important that the word "infection" and the word "contagion" should be defined strictly as can be done by the suggestions made by Dr. Reed. I think it would be a very fine thing, and no doubt be a great benefit to students. I presume Dr. Reed is finding trouble from that source. Students get confused and naturally enough do not know what distinction to make between infection and contagion. I think we had better carry out Dr. Reed's suggestion, which I think is a very good one.

The motion made by Dr. Kibler was seconded by DR. MAYNARD, that in conformity with the suggestion made by the author of the paper, a committee of three be appointed to confer with the American Surgical Association and the AMERICAN MEDICAL ASSOCIATION, to confer with like committees from those bodies to take up the subject of the matter suggested in the paper.

DR. REED—I would suggest an amendment to that, that in addition to having a committee appointed here the Secretary be instructed to request those bodies to appoint similar committees to confer with this committee relative to this matter, setting forth the reason for such a committee.

DR. KIBLER—In order to make this thing quite clear, I would like to amend that motion a little, that Dr. Reed, our President and the Secretary be that committee if Dr. Maynard will agree.

DR. MAYNARD—I accept.

The resolution was then reduced to writing as follows:

Inasmuch as there is much confusion as to the proper use of the terms infection and contagion, be it

Resolved, that a committee consisting of Dr. Reed, the President and Secretary of this Academy, be appointed to confer with a like committee from the Americal Surgical Association and the AMERICAN MEDICAL ASSOCIATION, with the idea of coining a new word that will meet with the approval of the profession.

DR. WM. T. DALBY, of Salt Lake City, Utah—The question of infection and contagion is a question that was brought up and discussed in its entirety by Dr. Hammond, of New York, some ten years ago, and seems to be a very difficult one to handle. Some diseases seem to have both the condition of infection and contagion. After a lengthy essay on this topic he came to the conclusion which we are at the present time, that is a condition of confusion. The question as I understand the resolution is, that a committee be appointed consisting of three Fellows, to confer with like committees of the AMERICAN MEDICAL ASSOCIATION and the American Surgical Society that would represent the three associations. I believe it would be almost impossible to get these nine men together. I think it would be a better idea if this Association, the Academy of Railway Surgeons, would themselves make some effort to define, if there can be a definition at all, between these two terms. If we expect to have a conference with a committee of these other two associations, I am afraid when we meet again a year hence we will be in the same condition as we are now.

DR. REED—Before submitting this proposition, in the paper, I have taken the pains to consult with quite a number of the prominent members of the profession throughout the country relative to this matter, and I have been unable to find any one member who felt that he was able to offer a substitute for the terms used that would be satisfactory from a surgical standpoint: at the same time, every member of the medical profession that I have consulted agreed that the terms were exceedingly confusing. Now if a term is decided upon, if some particular name is suggested, it would be well, it seems to me, to have the indorsement, not only of the American Academy of Railway Surgeons, which you all know is a child, so to speak,

in the arena of American medical and surgical associations, but also the indorsement of the American Surgical Association and the AMERICAN MEDICAL ASSOCIATION. I agree with the gentleman who spoke last, that it would probably be somewhat difficult to get a committee together on the subject, but it is highly important that we should get them together. If we adopt a term, with a membership of one hundred, and start out to use this term, we may find some difficulty in getting this term adopted and we will still remain in confusion. My idea is to have it adopted by the leading associations and especially the AMERICAN MEDICAL ASSOCIATION, that this term may go out and be used by these members, and very soon the terms that are now in use will become obsolete, practically, and the new term as adopted will be taken up. The questions that we are considering now more particularly are those from a surgical standpoint and it is certainly exceedingly confusing to use these old terms. Ten years ago the matter from a medical standpoint was scarcely considered, and it is only since the question of aseptic and antiseptic surgery has become prominent that the term infection has come into use. Unfortunately, it seems to me, we have accustomed ourselves to the habit of saying that a wound is infected, when in fact we mean that something has come in contact with that wound and is introduced into it either a specific poison or a microbe of some character. For us to say that a wound is contagious would sound quite bad, hence we have as a consequence dropped on the word infection, and we say that a wound has become infected when we do not mean to use the word as interpreted by our dictionary. We have used the word abstractly, and for that reason I think it necessary as has been suggested by prominent men, to coin a new word. It has been suggested that we get some parties on this committee from one of the associations who are Latin and Greek scholars; they might be able to coin a suitable word that will express our views on this point more accurately. I concede that while there is a great deal of confusion in this matter there is going to be no small amount of trouble to get a word that will be convenient and will mean just what we want it to mean when we desire to describe the introduction of foreign germs into wounds in surgical practice.

DR. A. D. BEVAN, of Chicago—I am opposed to the resolution. I do not believe that it comes within our field of action. Work of this kind, if it is done by medical men at all, should be done by pathological and bacteriological societies, societies which have a wider scope of action than the Academy of Railway Surgeons. We might as well devote all our time to taking up the many points in contest in the nomenclature of any other line of medical work, and I do not believe that it is wise for us to take up a subject of this kind; I do not think that it would be any great credit to this Association to attempt work in this line. I should like to see the resolution voted down. Work of this kind certainly belongs to lexicographers and biologists and not to railways surgeons, and I believe we should limit our work here to railway surgeons.

DR. REED—I fully appreciate the force of Dr. Bevan's argument, yet at the same time I do not think that the Doctor probably comprehends the difficulty in the suggestion that he makes. Take our pathologists and very few of them are in active surgical practice, with now and then an exception. We who are using the term every day feel the necessity of having something that will give us a definite idea of what a writer is saying when he uses a certain word. I do not think it is right for us to continue to use the word infection when it does not mean what we intend it should. It is not scientific, it is not scholarly, and yet if we wait for the pathologists to come to the front, who care little perhaps as to the use of the word, because they are not using the word in the sense surgeons are, I think we will wait till the snows of Iceland cover Chicago. I think it would be perfectly right, when it comes to the appointment of a committee from the AMERICAN MEDICAL ASSOCIATION, that they should appoint pathologists on their committee, and it is perfectly in harmony with the resolution that the pathologists should take a hand in solving the question.

DR. MEYERS, of Meyersdale, Pa., spoke in favor of the resolution, which was then read and adopted.

PREVENTION OF TUBERCULOSIS BY FEEDING.

Read by Title in the Section on State Medicine, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

BY EPHRAIM CUTTER, M.D. HARV. 1856, UNIV. PA. 1857.
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Introduction.—Tuberculosis is clearly the disease whose chief anatomic lesions are tubercles, *i. e.*, little tubers ("small potatoes" indeed) whose dire results are very great. They are minute, ovoid, obovoid or globular bodies, the products of biologic tissue invaded and preyed upon by a parasitic fungus whose infant state is generally deemed to be a bacillus and the mature form to be the mycoderma aceti, which generates acetic acid or vinegar. In other words, the action of the acetic acid of the vinegar plant itself and of the vitality of the invaded tissues result in hard little tubers (tubercles) as is well known. Like, but *large* tubers, are seen in plant biology; for example, the tumors on pear trees invaded by a fungous parasite, whose bacteria, mycelia and fruit (sporanges) penetrate the profoundest depths of the dense woody tissue, cambium and bark, as some twenty years ago I demonstrated by direct solar projections to members of the Massachusetts Horticultural Society at Boston.

In general terms, *tuberculosis* includes: 1, consumption of the lungs, oftenest recognized and is meant when the word "consumption" is used; 2, consumption of the bowels is, in my opinion, the most frequent form and most unrecognized. Foster's dictionary disposes of it in two words, *i. e.*, "tuberculosis intestinalis;" 3, tuberculosis of the joints; 4, visceral tuberculosis. While it is not intended to quarrel with nomenclature here, the writer thinks that the following definition of tuberculosis is most expressive, to-wit: "Partial paralysis and interstitial death."

By feeding is meant the prehension of outside substances that enter the body and become normal parts and parcels of that body, or confer the force needed to sustain life, thus including air as food. This very old idea needs to be revived, as so many now believe that tuberculosis is propagated by inhalation in air unpurified by sunlight and damp with abnormal moisture, in which foreign bodies more easily float in their aerial flight.

Feeding causes Tuberculosis.—One thousand cases of evidence are enough. See "Relation of Alimentation and Disease," by J. H. Salisbury, M.D., 1888. J. H. Vail & Co., New York. Ten hundred and twenty-six healthy swine were fed on sour whisky distillery slop until all were ill: 250 died and 104 autopsies were done in which were found tubercle bacilli. *Per contra*, 600 healthy swine were at the same period of time kept in pens next adjoining the above 1,026 swine, and fed on good sweet maize. None contracted tuberculosis, as they ought to have done according to late dicta adduced in support of the isolation of clinical tuberculosis. The evidence shows that 600 healthy swine penned next to 1,000 tuberculous swine, fed on proper food and breathing air laden with tubercular bacilli from a regiment of tuberculous hogs, *did*

not take tuberculosis. Apply this to man, and you have the proposition that *if you feed healthy people on proper food they will not contract tuberculosis in their vitiated air food.* More of this later, as we wish now to insist that tuberculosis prevails in those who feed on food that ferments in the alimentary canal with the acetic acid fermentation, or are fed on food that contains vinegar in excess before eating. When the mycoderma aceti is confined to the alimentary canal, as it is in very many cases of tuberculosis, consumption of the bowels occurs and constitutes a large majority of the cases of chronic diarrhea. Innate or other strengths of the intestinal epithelia constitute such a barrier that the vinegar yeast does not get into the blood. But when the villous epithelia are paralyzed by the CO_2 gas or made drunk by the alcohol formed in the alimentary canal (unless special means are used to prevent, alcoholic always runs into vinegar fermentation) then the said epithelia lose their power of resistance (much as an intoxicated person does) and suffer the mycoderma aceti to traverse them and enter the blood, where it is easily detected by the microscope, any time within a year before lung necrosis ensues sufficient to be positively recognized by the usual signs furnished by auscultation and percussion. And this microscopic inspection becomes a *sign* of the *pre-tubercular* state. (See essay submitted to the AMERICAN MEDICAL ASSOCIATION, "On a New Physical Sign of the Pre-tubercular State," 1877.)

Why the lung apices are the favorite site of tubercles is well explained by the facts:

That the lung capillaries are very sensitive to, and contract from, the application of cold.

That when in "catching cold" these capillaries contract, catch and detain collections of mycoderma aceti which otherwise would harmlessly pass through the capillaries.

That these form emboli which obstruct the circulation.

That the lung apices being near the outside air are most accessible to cold.

That because of their position in a comparatively inelastic part of the thorax, the apices are not very expansible, save by forced respiration, and thus are an easier prey to tuberculosis than the other parts of the lungs.

And that the troubles caused by the plant and animal tissue in this embolism, retard circulation and produce tubercles somewhat as in the pear blight aforesaid.

To me, the above is evidence ample to prove that improper feeding produces tuberculosis.

In his study of "Evidence," Ram says that "Fact is eternal." A finger put into the fire burns, as a rule. The burned finger is a fact. It makes no difference as to the witness who testifies that "fire burns"—whether an angel from heaven or devil from hell—whether a liar or truthful person—whether a virtuous or unvirtuous man—bond or free—yeoman or nobleman. The fact is eternal that "fire burns." Let doubters try it and see. So I affirm, if the facts as to the 1,600 swine are disbelieved, the doubters must upset the evidence by repeating these experiments. *This has not been done.*

I testify that I have yet to see a case of human consumption where its cause could not be traced to improper feeding more than anything else. The fact is, that society ethics exalt to highest plane, foods which, if not digested, ferment at once with alcohol and vinegar plants. More than 25 per cent. of the deaths of civilized man are from tuberculosis—the same proportion as in the hogs aforesaid.

Proper Feeding Cures Tuberculosis.—Or, rather, feed properly and, other things being equal, nature cures tuberculosis. To prove this, it is my privilege to refer to the Transactions of the AMERICAN MEDICAL ASSOCIATION, 1880, in which I reported twenty-five out of seventy cases of consumption, cured by stopping causes (improper food); oiling the machine with medicines and by hygiene—nature healing, as she usually does, no matter what you call the means of cure, even in cures by humbug! Nature is the healer, if she has a fair chance, regardless of diagnosis or conventional medical nomenclature. As with the gospel so with medicine: "I," Paul, "have planted, Apollos watered, but God gave the increase." "Nature" means something born. God is the father of nature. Nature, then, is but another term for God's power. Indeed, physicians are but as husbandmen planting and watering, while the cure is nature's.

This item of cure is introduced to complete the full grasp and circuit of the subject. The synthesis and restoration of tuberculosis makes, we think, a ring completely environing the subject in every part. As these caused and cured cases of tuberculosis, though long made known in print, have not been upset, we will show that tuberculosis can be prevented by:

1. Special feeding, avoiding causal foods. This axiom needs no explanation, but for the once fashionable treatment on the principle of homeopathy that tuberculin is the cure for tuberculosis, meaning the treatment of results by results. But is it not a better principle to avoid the causes beforehand? Certainly this is according to everyday ethics and the Section on State Medicine, the keystone of whose arch is *prevention.* Avoid fire and there is no burning. I avoid the food that produces tuberculosis and I have *no* tuberculosis. Or, to put it differently and concretely, the 600 swine avoided the sour food of the 1,000 swine and hence did not have tuberculosis as the 1,000 had. On the rules of evidence these facts are not disproved. It must be admitted that healthy swine fed on good sweet maize and avoiding the vinegar slop of the 1,000 *did not have tuberculosis.*

But you say: "Men are not hogs." That may be, and yet there are lots of humans who are voracious hogs, making swill tubs and vinegar yeast pots of their alimentary canals, so that their feces have raised bread, a sample of which is in my possession, made at my instance, confirming the experiments of Salisbury. Said 1,000 swine could not help themselves. Men can. They can prevent tuberculosis by avoiding all foods that ferment with the common alcohol (saccharomycetes cerevisiæ) and vinegar (mycoderma aceti) plants. Such are all vinegars and vinegar liquids—starches and sugars in excess—all composite foods (made up of many articles) sweetened with sugar, glucose, maltose, levulose, frugulose; in fact any animal, vegetable or mineral foods that ferment with alcoholic and vinegar fermentation. Foods that ferment into sulphydric acid and phosphydric acid are admissible, but must be used so that they will not ferment, else nerve palsies will occur. The judicious use of hot water prevents these paralyses by maintaining a downward peristalsis.

Celery, lemons, horseradish, butter, pepper and salt may be used as relishes. Hot water, clear tea, coffee and cocoa serve as drinks. Avoid corn-meal prepara-

tions, beans, soups, sweets, pies, cakes, pickles, sauce, preserves, fruits, vegetables, greens, pancakes, fritters, crullers, griddle cakes, salads and mush. Vinegar should be carefully avoided. This list is for patients, not healthy people; still it would be well to remember it.

2. General rule for feeding to prevent tuberculosis in healthy people: By bulk, two-thirds animal food to one-third food from the vegetable kingdom. Liquids at will, save sugars in excess. See "Food in Motherhood." E. Cutter; David Stott, 370 Oxford Street, London. Mothers on this diet, before and after pregnancy, have children with good constitutions. Lactation is full, free and not cut off prematurely. This is written advisedly. Children are a joy, not a sorrow nor nuisance in the house. Motherhood on this proportion of foods presents the most lovely spectacle seen on earth. Nothing more beautiful can arrest the gaze than a properly fed and kept motherhood, the "*ne plus ultra*" of domestic, social and "State medicine" bliss! Human beings thus raised will have the least tuberculosis. In fact, such constitutions will resist the invasion of tuberculosis by their very strength and integrity. Little fear would there be of tuberculosis by contagion or by infection, or the introduction of tuberculous matter under the skin of perfectly healthy animals. If so, then healthy kine tested with tuberculin infection would all have tuberculosis. Dr. R. L. Watkins was thus tested harmlessly a few years ago. Some unprotected persons have passed through life without having smallpox or measles, or scarlatina or diphtheria, though very much exposed. Even malaria needs a subject ill from malfeeding or some other depressing cause. The immunity of healthy nursing infants is a matter of observation. A perfect roof does not leak. Leaks come where roofs have solutions of continuity, *i. e.*, holes. A well made carriage goes over unhurt almost any kind of road, when one with loose bolts or tires or spokes, or cracked journals—to name no more—breaks down. Thus much for communication by *infection*. Now for *contagion* by the air.

Careful students of the morphology of the air realize what a vehicle the atmosphere is for all sorts of substances. Take the dust that gathers on top of railroad station advertisements for example. Most observers will readily agree that tuberculous bacilli or pavement epithelia invaded with bacilli or with the zooglea form or the mycelial form of the animalized mycoderma aceti, invade the air passages of almost every one, perhaps daily and hourly. The universal presence of alcohol in the atmosphere from decaying organic substances results from nature's means to rid the world of unused and useless fruits and vegetables, else we should live in a vast charnel house defiled by dead and dying organic substances. So that as vinegar is made from alcohol by artful use of air, it must be there are more or less vinegar plants in the atmosphere, and hence we must be more or less surrounded by aerial tuberculous bacilli. But sunlight and healthy secretions destroy these bacilli, or form a sterile nidus or soil for them wherein they do not develop. Hence the healthy body offers no habitat for this or other noxious vegetations. So we return to where we started from, to-wit, that proper feeding immunes from tuberculosis.

Domestic contagiousness of tuberculosis is explained by the fact that families generally live on the same foods now known to be causal, and the reason why all do not die is that some members resist more than the decedents. Lawn hose pipes do not go to pieces all at once like Dr. Holmes' famous "one horse shay," simply because their structure is not homogeneous, but weaker in some points than others. For one, I do not think that the average healthy person contracts tuberculosis by inhaling dried or other consumptive sputum. For something like twenty years, I have studied such sputa, *con amore*, with an Amici pattern microscope where my breath constantly passes over tuberculous expectoration. I have no consumption of the lungs. And this, too, when during childhood and youth I was disabled by consumption of the bowels! Had I lived on the foods here laid down to be avoided, doubtless I would have contracted lung tuberculosis, and dying might have served as a fine example of the contagiousness of tuberculosis by inhalation! To me the State legislation proposed for the seclusion of consumptives is unwise, because I believe that simple, plain rations of wholesome food can stop the dissemination of this disease. As to contagiousness by the alimentary canal, it may be said that all tuberculous food cooked to a temperature of 212° F. will destroy its power by coagulating the albumin of the germs, so that they will not propagate on a favorable soil any more than bread baked at 285° F. and showing automobile bacteria afterward, will raise dough. (See essay on "Leavens and Man" in archives of the Philosophical Society of Great Britain, deposited 1882.) Were it not for baking, common bread, eaten as dough, would soon produce tuberculosis of all eaters. It is a wonder that pumpernickel bread does not kill more Germans.

Finally, since air food is eaten about twenty times a minute during man's existence, since air is so vital an article that we are named "animals," and since our beloved and honored Dr. Lewis A. Sayre found that forced respiration cured cases of lung tuberculosis (and some tell the same story for vocal culture), *go in for air food* freshened by sunlight and purified by the winds of heaven. Let patients take in full breaths of such air. Have the whole lungs, apices and all, fully expanded. Keep the lung capillaries well dilated by easy voice culture or by the passive effect of music, as shown by Professor Doziel, of Kazan, Russia. Feed the right solids, semi-solids and liquids. Maintain good hygiene and thus do much to prevent tuberculosis in a common-sense, rational way.

120 Broadway.

HYPNOTISM NOT A GAIN.

BY H. L. GREEN, M.D.
MT. PLEASANT, IOWA.

To the ordinary orthodox medical student the production of hypnotism may immediately arouse the thought of some tangible, comprehensible agent, such as chloral, chloroform, ether or sulphonal, something if not ponderable and palpable, yet perceptible in some way. The laity generally ascribe the power of the hypnotist to an imaginary animal magnetism. Electricity, which has been classed imponderable, can be felt; and why also should not this claimed potency have its volts and milliamperes? To the scientific student or psychologist this vague claim is too mystic, savoring too much of the imagination and is found in the present onward trend of knowledge, not to have a sufficient basis. Hypotism, in the opinion of the writer, can mean only a more or less perfect sleep having

its expression primarily in the condition, physiologic and pathologic of the brain and nervous system; secondarily in other parts of the body system. The mind is not dependent, be it understood, on the brain alone for its seat but on the ganglionic system as well.

The physiologic and pathologic state of the mind may be illustrated in dream phenomena. Why not approach this subject through that of dreams as well as any other way? These have not in our day the same importance and significance they had when they determined the conduct of kings and the fate of nations. Dreams are apt to resemble the thoughts of the day or days immediately previous to them, or sometimes of a more remote period, and things which are familiar objects of thought or of observation of the times; in other words our night thoughts, occurring as they do when our mental control is partially suspended, are very much outlined and colored by the scenes and events of the wakeful day.

A person retires and falls more or less soundly to sleep. His brain, with most of its departments and cells, goes into a complete repose. A few cells, however, may continue to act, or keep up a limited activity the product of which is called a dream. The thoughts composing it may be as disconnected as the cells are disassociated. One idea suggests another; a single thought calls up a whole scene, a mental picture like unto reality. Since our controlling judgment is suspended, time and distance are annihilated. The dreamer blindly follows suggestion across oceans and continents; even decades and centuries present no obstacle.

Now this self-same suggestion is the magic word of the hypnotizer. Suggestion is more of a stimulant than depressant to the cells of thought. Through the agency of suggestion the performer makes an ally of the subject in overcoming the latter's will, disturbing and further widening the chasm of cell harmony and activity. The sensory centers may, as well as other parts of the brain, be affected and influenced in the same manner.

The writer knows an instance where an individual was so far affected that with his unaided hands he could and did tear out his testicles without the pain causing him to desist. It is well known that a speaker or performer has the advantage over an individual in the audience. The latter, even if opposed to the representations of the former, may have no set line of argument or tactics or rebuttal, whilst the former is loaded. This need not necessarily be so, but embarrassment one way or another, condition and circumstantial facts of the individual, and sometimes knavery, go to help out the operator. It is well known the foregoing conditions of the nervous system have their influence on the solids and fluids of the body, even to the constituency of the blood. Running thoughts in a general conversation suggested by one subject to another, is a good illustration of suggestion, and some of these running thoughts in a given seance taking on their natural or unnatural expression in acts constitute the gyrations of the hypnotic subject.

The relation of hypnotist and subject may now be not unaptly described in the words of an Irishman who said to the writer: "The Irish are so thick in Ireland they can hear each other think." But perhaps the best illustration of suggestion is given to us by Rabelais in "L'Episode des Moutons de Panurge," in which he relates that on a sea voyage Panurge to get even with the merchant, M. Dindenaut, who had injured him gravely, bought of him one of his sheep and threw it overboard into the sea. The example and bleatings of this sheep drew in all of its companions, which in line precipitated themselves one after another into the sea. The merchant himself was drawn in by the last one, which he tried to retain, and was himself drowned with his flock; they were all lost; *l'extravagance imitative de la foule.*

The expenditure of much of the energy (Might we not say waste of energy?) in hypnotism, if devoted to an effort for the discovery of a better hypnotic remedy, might result in a great boon to the profession and to the world at large. For the truth is the medical profession stands in great need of a better hypnotic medicine than we have. Indeed, we have comparatively few such remedies; hydrate of chloral is still probably in the lead as a clear hypnotic, but it requires considerable of a dose, with a taste by no means so agreeable as its smell and the danger line often very fine.

WHICH ANIMAL HAS THE MORE "COMMON SENSE," MAN OR BEAST?

A PLEA FOR MORE MODERATE LIVING.

Read before the Academy of Medicine, at Syracuse, New York May 21, 1895.

BY GEO. A. EDWARDS, M.D.

SYRACUSE, N. Y.

For what is man living? In the scale of being he is supreme; endowed in the highest degree with the wonderful power of reason—intellectuality, and clothed with responsibilities affecting nothing less than the future of the human race. In view of this, I assume it to be fit and proper to interrogate after such manner.

For what are *you* living? Stop, for a moment, the average, practical man of to-day, no matter what his profession, trade or calling, with this query. After a little confused reflection, he will very likely exclaim: "I'm blessed if I can tell; I believe I know less and less every day I live; haven't accomplished anything of moment thus far in life, and the issue of all my present aims and undertakings is uncertain; I reckon, sir, I'm just about a total failure."

Yet, this man is fairly well educated, bright and intelligent, a hard worker, enjoys some of what he terms pleasures and comforts, presents a good appearance, and is deemed, as the world goes, quite successful.

Pressed further and more closely for a true and thoughtful response to the question, and he will finally admit that he is living and laboring for the *means* which will enable him to satisfy his desires.

Living and laboring to satisfy his desires! And they are very many. Goaded by the "spirit of the times," with all its evil fashions, customs and habits; a loose rein, perhaps, on his appetites and passions; poisoned by selfishness, and envious of his more prosperous neighbor; he rushes on in the struggle, to win the empty prize of a false ambition; reckless of self and his dependents, with only delusive hope to cheer him on his way. And so this life continues to the end. Few achieve the goal of their longings, and if so, at what cost,—with all their capacity for enjoyment gone!

How did Heaven ordain man should pass his allotted time on earth; what daily plan decrée? With all reverence, perchance some such scheme as this: Work, alternating with rest, and recreation through innocent and beneficial amusements; regularity in

habit of both mind and body; moderation in all things; "friendships, content, progressive virtue, and approving conscience."

Is this an extravagant and ideal design for man's temporal sojourn? No; experience teaches its practicability, truthfulness and value; "common sense" will indorse it; reason, surely, should commend and proclaim it.

But does the boasted civilization and enlightenment of this almost the dawn of the twentieth century of our Christian era, preclude any approach to such an even-tempered, sensible existence? Alas! it seems too true. And must we roll back "the tide of years to the life led by primeval ages," or, bitter humiliation,—look down in the scale of creation for an example of a well regulated life? Let us see.

It has been well and truly said that we are living in the age of electricity,—the synonym of all that is intense and rapid in mental and physical activity. The "vital spark" has, indeed, enabled us to "girdle the earth in forty minutes," a prophecy more than fulfilled. The sea and land may pay tribute to commerce. Giant strides are being made in most of the arts and sciences. The genius of invention and discovery, twin offspring of supreme creative power, is gradually subduing the earth to man's domain and will. In the fine arts, painting and sculpture are transforming all animate life into imperishable images of striking naturalness.

And the art divine, music, "born with the morning stars," man's solace and charm, seeks to soon complete her tender sway by bringing all the flying discords into tune.

Wherefore all this intellectual activity and progress? Oh, it is simpy an index of human development, the higher civilization of the times! But how does it profit man's physical well-being? To become a factor in such an economy of existence must he sacrifice health, long life, and entail his infirmities upon successive generations? Let us particularize for a moment.

The merchant, or, it may be, the manufacturer, with inordinate selfishness and greed, anxious to outstrip his neighbor, and assuming upon ill-advised conditions great financial responsibility, we frequently see mourning over his losses and with blanched countenance tossing upon his pillow the livelong night from the specter of a large note due on the morrow, with no money in the till to meet it. All this followed by loss of appetite, indigestion, and probably a fit of nervous prostration.

The banker, or broker, is ever lost in the whirl and din of the exchanges, until he is or well nigh, a fit subject for the mad-house, asylum for paretics, or a victim to apoplexy.

The traditional artist, chained to poverty, struggling after reputation, often faints, ever suffers, and betimes dies by the wayside.

Your statesman, possibly, reaches the topmost round in the ladder of fame, but at great expense, certainly, to his moral sense, from the practice of strange political methods for advancement, and finally exclaims: "It's a bauble; emptiness!"

And to think of our favorite hero of a hundred battles (to borrow a subject from the early part of the century), dying in humiliating banishment, and with distressing disease, at the early age of 52, and in his last moments weeping that he can make no more crimson history!

Emperors and kings have become victims to the festive board alone.

What volumes of sad comment these few illustrations suggest, bearing so closely upon the health, happiness and longevity of mankind, and that may be justly charged to our super-civilized methods of living.

Why, there seems an insidious contagion abroad in the land, and to which we are all more or less susceptible, and which tends to stimulate humanity toward a brief lurid existence, crowded with work and worry and inordinately spiced with luxurious dissipation, as contrasted with a quiet, temperate, useful life, filled with happiness and content and rounded by a green old age with its soul-satisfying retrospection.

In this mad rush made by man after success, whatever this term may mean,—riches, fame, or what not, he can spare, strange to relate, no time to look after, or care for, what to him is of the utmost importance—his *physical condition*.

There is no methodical season for rest and refreshment of the body, so necessary to sustain its normal vital energy, and to the numberless ills which will ever supervene upon such a continuous round of labor and excitement, he gives very little consideration. And, yet, man is such a *rational* being!

Sleep, the necessary factor in the recuperation of the nervous system, is crowded out, virtually repelled, by business and professional engagements after working hours; innocent (?) amusements; social requirements; until exhausted nature rebels and, many times, issues her alarmingly peremptory orders. But, man is an *intellectual* being!

Man eats when he is hungry, or not hungry, any time, day and night, and what? Not always *simple, plain, nourishing* food! Drinks when he is thirsty, or not thirsty (especially on invitation), at all hours, and what? *Not always water!* Then there is that vile weed, tobacco; why, a brute will suffer death rather then receive it in any form, and yet man apparently can not do without it.

Oh, how wonderfully constructed, beautiful and valuable are man's reasoning faculties; "to know the right and still the wrong pursue!"

So with all man's superior (?) intelligence, by indulgence in food and drink, with utter disregard as to quality, quantity, or regularity, together with a continuous deprivation of sleep in proper season, and sensible outdoor recreation, is it small wonder that he suffers from such diseases, some one or all, at different times, as troubles with the digestive tract—dyspepsia, indigestion, bilious conditions, diarrhea, constipation, hemorrhoids, the various neuroses, neuralgia, pneumonia, rheumatism, gout, lithemia, alcoholism, the baneful effects of tobacco, impairment of the senses, especially vision, and indirectly or secondarily, affections of the kidney, particularly Bright's, diabetes, and degenerative changes in other important organs, the circulatory and nervous systems.

Now, strictly speaking, most of the common and prevalent diseases affecting man, and this is quite true of the brute creation, should occur, if at all, from accidental causes; that is, the acquisition thereof, be due to conditions he is ignorant of at the time, or beyond his control. He would then be an innocent sufferer deserving of some sympathy like his fellow, the brute, under similar circumstances, and secure and guiltless of the charge herein made.

Hence the statement can safely be made as a fact, which same I believe will be very generally acknowledged, certainly by physicians, that the diseases above mentioned, in a great measure at least, are acquired by man through faulty practices and methods of living or no method at all, and consequently by the non-exhibition of his reasoning faculties, to say nothing of the exercise of "common sense," supposed to be possessed by all humans.

Moreover, if the truth of this premise be recognized, all disease contracted under known conditions and circumstances is preventible. And so it follows that man himself virtually becomes the author of all the miseries of much of his own ill health and often the crime of untimely death; his own executioner, as it were. Ignoble being! for such he proves himself, representing a human paradox! in significant contradistinction to the "equine paradox," of which we have all heard, if not seen, and fulfilling the truthfulness of the common expression that "Man is his own worst enemy."

At the expense of a little digression, perhaps, may not the question be here well put, if it is not just as plainly injurious and suicidal for the well-to-do gentleman to overwork, or do none, overeat and undersleep, with the sure result of fatal disease following sooner or later, as it is for the poorly paid laboring man having, perhaps, a large dependent family, to seek the only relief and oblivion from his troubles and hopelessness in the flowing bowl of the dramshop, with the sequence of alcoholism, the almshouse and death? The manner of acquiring disease and courting death may not be quite so dignified and honorable in the one case as the other; but there is a similarity to the final issue, and about the same small amount of good sense displayed in each.

The question naturally arises: Why does not man, when the principles and practice upon which health and life depend are so plainly obvious, exercise his faculties to secure the desired result? Are the reasoning powers at fault? "Common sense," at all events, would seem to be sufficient to teach him the proper course to pursue, and he ought to have a little of this in his make-up.

After all, this incongruous element to man's mental equipoise may possibly be accounted for on the supposition that originally and at best he is provided with very little "common sense," but being easily susceptible to vast quantities of knowledge and nineteenth century wisdom, he rapidly becomes the educated fool—the worst of all fools. The latter, we know, always turn to excesses and die young.

Let us now turn for a moment to examine the beast, its chief characteristics and habits of life.

Physically there is no essential difference between man and the brute creation. Bone, sinew, muscular and nerve tissues, if examined macroscopically or microscopically are found to be identical. The vital organs and senses are the same, perform the same functions and serve similar purposes. Resolved into its ultimate elements, we find the same food sustaining life in the beast as in man; and under like conditions of causation, most of the diseases affecting the two or three higher orders of animals under consideration present the same clinical features.

Now the beast unless inhumanly interfered with and maltreated by man is proverbally healthy (always excepting accidental disease) and lives its allotted time. To be sure, the beast leads a somewhat more outdoor existence, and hence gets the benefit of more pure air and sunshine. But man, I take it, has an equal privilege to appropriate more of these life-giving attributes and would, if he had enough "common sense" to take advantage of it.

In truth, I know of but one reason why man should not be as healthy and long-lived as the brute. It is this: civilization compels him to wear clothes! That he is immensely handicapped by this specialty I will freely admit. Yet, even with this great drawback, I shall still assert he has a fair chance to attain and preserve the strength of true physical manhood. Perhaps many of you do not realize what a curse clothing is to man—I mean as regards his physical well being. And for the benefit of those who possibly have never investigated this subject, I will relate in brief the experience of the missionaries Sterling and Bridges, men who have had much to do with civilising and christianizing the natural product of the *genus homo* in far off and almost unknown lands. It will serve to illustrate the point I wish to make and may be strengthen the seemingly audacious statement just made.

In 1869, Rev. W. H. Sterling, now a resident of Buenos Ayres, and Bishop of the Church of England for South America, established a mission with the Yahgans, a large, healthy and powerful tribe of native Indians inhabiting one of the islands near Cape Horn. He selected for his residence and labors Ushuaia Bay, a tiny settlement on the narrow channel which bounds Terra-del-Fuego on the South. Mr. Sterling subsequently returned to England to be ordained in the episcopate, and in 1870 his work at Ushuaia was resumed by the Rev. Thomas Bridges and wife, who still live at this little place, on the shores of Beagle Channel.

It is from the latter's experience I quote chiefly: "A tribe of Indians that lived naked in a climate where snow storms raged in every month of the year, was to be transformed into a community of farmers. A people who had in all their wonderful language of 40,000 words no term or idea of God or a future existence, were to be taught and Christianized. Instruction began. The Yahgans who would work were given food. Navy bread for breakfast, meat stew and hard-tack for dinner, hard-tack for supper, with refreshing drinks of milk and water slightly thickened with flour, and sweetened. Clothing was also supplied them as fast as the mission was able." This work continued regularly and finally in 1881, eleven years after Mr. Bridges began his work, "in spite of sterile soil such progress had been made, that the mission reported a Christian village, with cottages instead of wigwams, and an extemporized church in the midst. Much ground had been cultivated, and cattle, sheep and goats had been introduced. Moreover, every Yahgan wore clothes. Great was the change at Ushuaia Bay."

"The missionaries had some 'significant contrast' photographs taken, and they were reproduced in an English magazine. But a more marvelous change than anything photographed was even then in progress. The natives began to get sick. Then they died. The race had been hardy and vigorous. They had actually increased in numbers while living naked and smeared with grease from head to foot. But when put to work as farm laborers, and washed and clothed like white folks, they complained of being 'tired and sore' and they had to be nagged into working steadily. They had slept in the freezing rain, but now, if they sat down in their shirt-sleeves while at work, they caught cold that developed into fatal disease.

Consumption and pneumonia appeared and assumed frightful aspects. Little children that had been round-limbed and bright-eyed when naked in a canoe, were wasting rapidly away in excessive languor, though clothed in woolens and living in a warm house. They continued to waste and die and from that day to this, not one child, in dozens born, has survived its first year! Of a tribe 3,000 strong, healthy, hearty and happy, fewer than 300 can now be found." . . . . But I spare you, and will not press the moral of all this.

Passing on and to resume the argument, suppose we inquire if the brute really does possess "common sense"; that sense or faculty, which is recognized as the simplest action of the brain, the organ of the mind; in other words, we will say the lowest grade of reasoning power.

We have all seen, if we ourselves can not exercise a similar function, exhibitions of good, common, or "horse sense" as the expression goes, and no one I fancy will wish to deny this distinguishing characteristic to that noble animal of the *genus equus*.

Some may still say that the beast is governed by instinct. I do not know how most comparative physiologists of the present day speak on this subject, but it seems difficult to conceive how such a term can be justly used to express the power of comprehension so frequently manifested in the brute.

Even in the apparent automatism of lower forms of life, an occasional flash of intelligence is easily discerned, and as we rise in the scale of being, and witness in the brute creation positive evidence of the intentional adaptation of means to ends—the offspring of thought, we must here acknowledge reason as the governing and controlling power.

Professor Huxley goes further, and, in summing up on this subject, says (and I need not quote higher authority, if it were possible to do so): "I have endeavored to show that no elaborate structural line of demarkation can be drawn between the animal world (brute creation) and ourselves; and I may add the expression of my belief that the attempt to draw a psychical distinction is equally futile, and that even the highest faculties of feeling and intellect begin to germinate in the lower forms of life."

On the whole, we may safely declare every living thing to be endowed with sufficient intelligence to direct its individual efforts toward doing and obtaining what is needful for its safety and best physical good.

In all the varied forms of life on this great earth, each and every creature, with one exception, makes use of this priceless gift for the purpose just indicated. Why the "crowning work of creation" is the exception is an unsolved problem.

Now, if we are quite ready at this time to grant the brute even common sense, does he exercise it?

In the daily contact with our best friends, the animals (brute creation), how often is one seen to suffer from any ill effects whatever from over-eating? Very, very seldom. And many animals enjoy gormandizing as well as man. There must be some simple secret to account for their invariable escape from the "seven devils" of dyspepsia and indigestion. Can it be plainness of diet? If so, man will do well to make a note of this. I can not say precisely what the effect would be on the most sturdy specimen selected from among our dumb fellow-creatures; if it were senseless enough to indulge night after night in a bill of fare consisting of ham sandwiches, lobster salad, escalloped oysters, cake, candy, pickles, ice cream, strong coffee, champagne, etc., and all in addition to its daily allowance of customary food and drink; but think it would "fetch 'em—the gripes," sure and quick enough.

Why, the incomprehensible, indestructible digestion of "McClusky's goat" (that much abused animal), would, I believe, be somewhat disordered by frequent repetitions of such a festive *menu*. But the brute creation does not commit such crimes against itself.

Again, did you ever see a beast that did not know enough to prepare and go to rest and sleep at nightfall, if it were allowed to do so? I pause for a challenge to this assertion. Oh, ye creatures of superior intellectual capacity, canst thou gather no moral from this?

As might be expected, animals with such regular and exemplary habits in eating, drinking and sleeping are seldom sick. Indeed, very rarely, I believe, unless by accident, or ill treatment.

What an amusing innovation it would be to learn that your horse had an attack of acute dyspepsia! Is it very common to hear of a cow suffering with nervous prostration? A dog with rheumatism? A sheep with diarrhea? And did anybody ever see a cat, no matter of what age and in any emergency of its feline life, when it was thought to be in great need of spectacles?

We might press the inquiry on this line much further, and endeavor to seek in creatures so clearly allied to us the diseases commonly affecting ourselves, but I am very certain the effort would be quite barren of results.

In the condition thus revealed of man by contrast with his fellow creatures, proud as he ever is of being chiefest in this world of life, would it be too humiliating for him to admit that he might gather lessons of much value to his physical happiness and well-being from the plain and simple habits of a lower order of animals?

And what, if any, are the axioms to be deduced from the argument, and which man should keep ever near to his counsel, if he would retain his health and be long lived? They are, seemingly, self-evident; he should live frugally; avoid intoxicants; seek sufficient rest and sleep at the proper time, and the more pure air and sunshine he can expose himself to, the better.

Furthermore, and to repeat a little old and true philosophy, he should remember and take warning, that even to be able to exercise good "common sense," he must have a healthy body. That "haste makes waste." That wealth begets luxury, luxury begets idleness, and idleness breeds crime. And, finally, that t here is no ambition worthy to be cherished, which leads him away from a conscientious duty he owes to himself, his fellow-man and his Maker.

With your kind indulgence, I have conducted both sides of the argument of this discourse (if it can be dignified by such a title), in a simple (I am not bold enough to say humorous), yet truthful way, and shall ask still further for the extraordinary privilege of acting the part of judge, as well as of advocate in the controversy. So if appealed to for an opinion on the merits of the question as stated at the outset, "which animal has the more common sense, man, or beast," I must, in view of the preponderancy of evidence herein offered, in the shape of a formidable array of facts and of which we are all, perhaps, too familiar, decide in favor of the brute.

Still, I believe there is hope for man, if he has not much "common sense;" and trust the startling revelation you have so meekly and patiently listened to will cause no one to despair of his own condition, or think that the future promises less for the nobility of true physical manhood. For, in the language of another, we may be consoled by the reflection that, "there is still a vast gulf between civilized man and the brute." "The power of knowledge; the marvelous endowment of intelligible and rational speech; the conscience of good and evil; the pitiful tenderness of human affections; raise us out of all real fellowship with them, as a mountain top, far above our fellow-beings, and transfigured from our grosser nature by reflecting here and there a ray from the infinite Source of all Truth."

CALCIFICATION.

Read in the Section on Dental and Oral Surgery, at the Forty-sixth Annual Meeting of the American Medical Association, at Baltimore, Md., May 7-10, 1895.

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Calcification is a process by which organic tissues become hardened by a desposition of salts of lime within their substance. In the intercellular tissue and in the substance of the cells themselves, these salts are deposited by the rich blood supply always near. They are deposited in minute particles and in such fine subdivisions that it makes it difficult to demonstrate many of them even with the higher power of the microscope. The intercellular substance, either a protoplasmic or gelatinous fluid or semi-fluid, contains the lime particles. In it they change their chemic nature, uniting with the organic substance of the part and form small globular bodies which have been called calco-spherites; and these blending or coalescing into a mass form a substance called calco-globulin. This calco-globulin, which is a lifeless matter, has been deposited through the cells into a gelatinous substance, and in some cases into the substance of the cells themselves, where by a further hardening process, it becomes the fully calcified matrix. Most of us are more or less familiar with the experiments of Mr. Rainey, and later of those of Prof. Harting and Dr. Ord. But, as an essay on this subject would not be complete without a brief quotation, I introduce some of their experiments. "If a soluble salt of lime be slowly mixed with another solution capable of precipitating the lime, the resultant lime salt will go down as an amorphous powder, and sometimes as minute crystals." But when the lime salts are precipitated in gelatin or albumin, the character of the lime salts is materially altered. Instead of a powder, there were found various curious, but definite forms, quite unlike the character of crystals or powder produced without the intervention of the organic substance. Mr. Rainey found that if carbonate of lime be slowly formed in a thick solution of albumin, the resultant salt has changed its character, it is now in the form of globules, laminated like tiny onions. These globules when brought in contact with one another become agglomerated into a single laminated mass, it appearing as if the laminæ in immediate opposition had blended with one another. The globular masses at one time of mulberry-like form, lose the individuality of their constituent smaller globules and become smoothed down into a single mass, or layer, and Mr. Rainey suggests as an explanation of the laminated structure, that the smaller masses have accumulated in concentric layers, which have subsequently coalesced; and in the substitution of the globular for the amorphous or crystalline form in the salt of lime, when in contact with organic substances, Mr. Rainey claims to find the clue for the explanation for the development of shells, teeth and bone. At a more recent date, Prof. Harting took up this line of investigation and found that other salts of lime would behave in a similar manner, and that by modifying the condition of the experiment very various forms might be produced. The most important addition to our knowledge made by Prof. Harting lay in the very peculiar constitution of the "calco-spherite," by which name he designated the globular forms seen and described by Rainey. That these are built up of concentric laminæ, like an onion, has already been stated, and Mr. Rainey was aware that albumin actually entered into the composition of the globule, since it retained its form even after the application of acid. But Prof. Harting has shown that the albumin left behind after treatment of a calco-spherite with acid is no longer ordinary albumin; it is profoundly modified, and is become exceedingly resistant to the action of acids, alkalies and boiling water. For this modified albumin, he proposes the name calco-globulin, as it appears that the lime is held in some sort of chemic combination, for the last traces of lime are retained very obstinately when calco-globulin is submitted to the action of acids. Now it is a very remarkable fact that microscopic glistening specks and globules are constantly seen at the edges of tissue where enamel, cementum, dentine or bone are to be formed or are forming. Robin and Magitot have described isolated spherules of lime salt as occurring abundantly in the young pulps of human teeth, as well as those of other animals, and Tomes suggests that perhaps all deposits of lime salts commence in this way. These microscopic, globular bodies have been called calco-spherites, and it appears as though some such process as described by Prof. Harting is transpiring within the substance of the tissues where bone, dentine or enamel is to be formed. It will be noticed that near this point of formation there is always to be found a rich, capillary blood supply, and from this the lime salts are given out. As I have said, near the forming matrix the tissue is seen to be full of these microscopic, glistening bodies, the minute atoms which are often spoken of as granules. The abundant appearance of these globules at the time of the formation of the enamel and their entire absence at earlier stages is to me an indication that the globules are an enamel substance, the matrix-forming calco-spherites, and following up their future confirms this. Many of them are so small as to be scarcely measurable; they are almost always spherical. The lower part of the cell toward the dentine contains the larger globules. The growth of the enamel rod once begun takes place by additions of these globules. I am convinced that the larger ones are composed of hundreds of the smaller ones, which have coalesced into the main mass. When enamel is commencing its process of calcification, if we examine carefully with high powers a tissue that has been properly prepared so that there shall be the smallest amount of shrinkage, we shall find in that slight amount of the enamel organ that is directly over the calcified point of dentine, in what remains of the stellate reticulum and in the stratum intermedium principally, a very large number of glistening points. Most of these are minute, micro-

scopic in fact. They are the calco-spherites in process of formation, or rather, they are the minute particles of lime from the blood supply, changing their chemic nature as they pass into the protoplasmic juices of the part. These appear to be passing into the formative cells and these cells superintend their formation into enamel rods, that is, they are laid from the cell against the forming rod. Within the substance of the ameloblasts they are seen to be growing larger by the smaller ones coalescing with others. If at this point of their development the layer of enamel cells is pulled away from the cap of formed dentine, we shall see that the cap of dentine is everywhere covered with quite regularly formed globular bodies. If on the other hand, the layer of enamel cells is against the formed cap of dentine the masses are assuming block-like forms, as though taking the form of the future enamel rod. They appear to be in a gelatinous substance which is between the dentine and the enamel cells, and here, by an unknown chemic hardening process, they become the hardened columns of the enamel, as I have formerly described in a paper read at Berlin, 1890. In dentine the calcifying process goes on in much the same manner. The odontoblasts are merely masses of protoplasm, and appear to have no membrane; as is the case with the ameloblast, it has a nucleus at a point farthest from the calcifying matrix. In forming the dentine matrix, the odontoblast, or the pulp tissue through the odontoblast, gives out a rich gelatinous substance about as wide as the layer of odontoblast cells. Everywhere between the odontoblasts, as Mummery has demonstrated, is found a rich supply of connective tissue cells, whose function appears to be the forming of a net-work of connective tissue fibers into this gelatinous substance, this net-work seeming to be a scaffolding upon which the calco-spherites, which are to form calco-globulin, are to be deposited. Into this layer the odontoblasts are also superintending the placing of the minute globules which are within them, and which have been given to them by the rich blood supply found everywhere near their pulp ends. Into the gelatinous substance the globules form against the calcified matrix, where, fusing with others, they form a mass, entirely filling the gelatinous substance. This gelatinous substance with its mass of globules now becomes calco-globulin. By some natural hardening process, it then becomes calcified matrix, and thus another layer of calcified matrix is formed. We must remember that it takes a large number of sections to show these various stages of growth. Each section shows the picture at the point where death of the part has left it; another section will show another stage, and so on. In one section we shall see the odontoblasts against the gelatinous layer with the globules within it. Another section will show an entire absence of the gelatinous layer, with pear-shaped cells a little away from the calcified matrix and with portions of cells clinging to the calcified matrix found here and there, that look like odontoblasts. Another section will show the globular masses filling up the gelatinous layer just before a new layer of calcified matrix is formed. It is only by studying these various stages of growth that we can come to any correct conclusions. In the cementum, a tissue I have not studied as carefully as I have the others, I am convinced that the calcifying process is much the same. The first cemental calcification takes place by the cementoblasts giving off these gobular bodies near the neck of the tooth against the forming dentine of the root, into a gelatinous substance, this also being given off by the cells. It assumes the form of plates or scales. Afterward the cells themselves appear to fill with the globules and lose their identity in the forming matrix. That peculiar tissue which we call "tissue on the borderland of calcification" is composed of globular glistening bodies which have coalesced and formed a layer within a gelatinous substance previously given out by the formative cells; in this condition it is a tissue indestructible both in acids and in caustic alkalies, and only in this condition is it true calco-globulin. The conclusions here given on the subject of calcification are arrived at after many years of original investigation, made at such times as could be spared from a busy professional life. They are, I believe, with slight modification, accepted by most of the more recent authorities. It is my object to have presented my views in as clear and simple a manner as possible, that I might enable those of us who are not intimately familiar with the natural processes concerned in calcification to form a clear idea, that they might draw their own conclusions as I shall review very briefly some of the, to me, erroneous views presented in a very recent work. I refer to a work entitled "The Anatomy and Pathology of the Teeth." The author and his associates, in a chapter describing "The Calcification of the Enamel" make these statements. They observe "that the more we turn to the center of the cup [enamel organ] the more shall we be struck by the presence of glistening, homogeneous lumps in the epithelia, until we have reached the center of the cup, where we observe that epithelium has been transformed into a number of such lumps in a regular arrangement, which reminds us of their origin from previous epithelia. The original epithelia [enamel cells] gradually become enlarged and are at last split up into a number of medullary corpuscles." "Medullary tissue develops into connective tissue of a decidedly fibrous character." "There is good reason for the assumption that the medullary tissues sprung from the previous external epithelium [of enamel organ] is the source for the completion of such enamel as we observe upon temporary teeth when they emerge from their sockets." And again, "if we examine the lower edge of the cup of the enamel organ at about the sixteenth week of embryonal life, we observe a peculiar change in the columnar bodies of the internal epithelium, which consists in the appearance in a more or less row-like arrangement, of highly-glistening globular bodies, replacing the previous columnar epithelia. These bodies are either solid or slightly vacuoled and are formations of living matter such as we are accustomed to look upon as medullary, embryonal, or indifferent corpuscles, in their earliest stages of appearance. Obviously, these glistening globules have originated from the reticulum of living matter of the columnar epithelia [enamel cells] themselves. We feel justified in this conclusion from the fact that we can trace step by step the growth of these glistening granules up to the formation of glistening lumps such as we have termed medullary corpuscles. . . . . The lumps, I wish to repeat, are extremely glossy, with a high degree of refraction. They are arranged at first irregularly in a layer of considerable breadth, and higher up in rows, and by their coalescence and prolongation give rise to small columns, the ameloblasts. . . . These [medullary] corpuscles or the liquids

contained in their reticulum become solidified into basis substance and immediately infiltrated with lime" salts. . . . "The enamel rods are built up of rows of such calcified or petrified medullary corpuscles."

These observers in regard to the calcification of the dentine endeavor to show that the odontoblasts are split up at their distal ends into these glistening bodies which they call medullary corpuscles. "These medullary corpuscles are lumps of protoplasm, in which living matter is stored up in different shapes, the glistening globules of small size having arisen from protoplasm, and that these represent a juvenile condition of living matter in its most compact aggregation which enter directly into the formation of the basis substance of dentine, while at the same time, continually superadded to the proximal ends of the odontoblasts are medullary corpuscles derived from the living matter of the papilla. Thus the continuity of the odontoblasts in dentine is established." They assert a similar proceeding from the ameloblasts, in a reverse direction. Thus, the ameloblasts being broken up at their proximal [dentine] ends into medullary corpuscles, which are directly transformed into blocks of enamel rods, are superadded to at their distal or peripheral ends by medullary corpuscles derived from the stratum intermedium. "The indifferent corpuscles serving to supply additions to the ameloblasts, exhibit all intermediate stages between small, globular, glossy and compact nucleated, protoplasmic lumps." "Nothing but a transmutation of solid, globular lumps of living matter in delicately reticulated medulary corpuscles seem to be required for the building up of the minute blocks of the enamel rods without the intermediate stage of ameloblasts. . . . The first appearing enamel is made up of irregular, angular, glistening lumps, greatly varying in size."

In these few selections from a chaper in this work on "Calcification," I have given some of the points which they present, and these I propose to briefly review. No one can be more clearly aware of the patient and persistent effort, and of the immense amount of labor and earnest research which the author has given to his work than myself, and great credit from his profession is due to Dr. Bodecker for this labor. I am not in accord with his views as to calcification of the dental tissues or the views of his master, Prof. Heitzmann, or of Dr. Abbott, on this subject. To some of us, "the reticulum" and the "medullary corpuscles" are bug-bears. We are familiar with, and have had many a conflict over these peculiar theories. To the earnest investigator who did not know the author, it would seem from their description of the calcifying processes, as if a tissue had been built up to fit a theory. So far as I am aware, photo-micrographs of these tissues, as described in this chapter on calcification have never been shown. There is no absolute evidence to prove the correctness of their assertions. Heitzmann, as an illustrator of histologic or pathologic tissue, is an artist, but however beautiful these drawings may be, the photo-micrograph is the picture with the stamp of truth that is convincing. The charge of "personal equation" could not be made in such an illustration.

In the May *International Dental Journal*, Dr. F. A. Roy, one of Heitzmann's students, writes to the editor, thus:

"In your review of Bodecker's book, you charge that there is no real evidence to prove the correctness of the theories advanced; and that the views are based solely on drawings in which the personal equation is a prominent factor, for the drawings are all by Heitzmann. And you state that 'drawings, however beautifully done, can not carry conviction. A few photo-micrographs could have accomplished far more.' Also, 'it leads to the suspicion, whether justly founded or not, that either the slides can not be represented or that they have no real existence.' And 'it would seem that no expense should have been spared to meet this demand.' . . . . A section must necessarily be examined at high powers of the microscope in order to see the reticulum. But no photograph yet produced of a section at such high powers can show what the eye can see. Even the thinnest section has a thickness that is very great when magnified by a high power, and the filaments of the reticulum do not lie on the surface, nor all in one plane but are in planes at immeasurable angles with the line of sight. The reticulum is not an open network, but is imbedded in a material not altogether transparent. We hope at an early day to succeed in making a photograph just as the drawing is made, by composite action of a number of negatives at different focal distances. Then we will have some astonishing revelations, such as we have synthetically in Marey's, or the kinetoscopic photographs of objects in motion. Certainly with the wonderful improvement in high power microscopes and in rapid photography the correct combination will come soon. Meantime Heitzmann's master drawings are not only better, but better evidence than present photographs. Heitzmann's answer no doubt is the only correct one—come and see. Come to his laboratory and learn how to see. Anyone who is unable to see the reticulum does not know how to see it. He that will not accept Heitzmann's drawings will not accept even the coming photographs, and probably he that will not accept these evidences is not willing to go to the expense of time and trouble to learn how to see for himself: certainly that individual expense should not be all saddled on Heitzmann or Bodecker, *et al.*

(Signed) F. A. Roy."

I have made a quotation of this letter simply because I wish to show you on the screen to-night that it *is* possible to photograph any recticulum which was to be seen, if it were there. This reference to a composite photograph is to me very interesting: such a process, in my judgment, can never be effected. Besides it does not seem necessary. With our present knowledge we can show anything that is to be seen. Some years ago Professor Heitzmann and his New York friends were said to have gone to considerable expense in procuring an electric lantern with which they were to show the reticulum. It is now something over four years, and nothing has been shown confirming their peculiar theories. In fact, a denial of the existence of Heitzmann's reticulum comes to us from the best European authorities. This we shall find, among others, in Butschili's work on "Protoplasm and Microscopic Forms," a recent standard work of great value on this subject; and there are others. The whole chapter of Bodecker's work on "Calcification" is decidely out of harmony with the teachings of modern investigation, and it seems to me to have been hasty and unwise on the part of the Association of Dental Faculties to have recommended this work as a text-book to the students of our colleges at this early date, especially as the work has no practical value. To one who is familiar with the subject, it is extremely doubtful that the glistening homogeneous lumps seen in the epithelial layers of the enamel organ have their origin in the reticulum of living matter of the epithelial layers, and it yet remains to be proven that this epithelium does split up into a number of medullary corpuscles of a fibrous character, and then become formations of living matter. It is an assertion that can not be proved true; that these glistening lumps, by coalescing and prolongation, give birth to the ameloblast. No; their so-called lumps of living matter—their medullary corpuscles—are but masses of a lifeless lime matter known to be calco-globulin. These masses are not medullary corpuscles;

they do not arise from protoplasm, nor do they represent a juvenile condition of living matter in its most compact aggregation. I wish to repeat: their medullary corpuscles, as represented in their illustrations, are nothing more nor less than lifeless lime globules, having nothing whatever to do with the origin of the ameloblasts. Years have passed since the peculiar views of these authors have been given, yet they have never been accepted by any acknowledged authorities. On the other hand, there are many who regret the action of the Association of Dental Faculties recommending to our students a work that has no practical value, as a text-book; a work of new and strange theories, as yet doubted and unproven; a work that will only mislead and confuse the earnest student searching for the truth. The work has a value, a great value, perhaps; but it is not for the student; it is solely as a work of reference and comparison in the library of the investigator.

INTERESTING CASES OF PERINEAL SECTION. WITH REMARKS.

BY G. FRANK LYDSTON, M.D.

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During my seventeen years' experience in surgical work, it has been my fortune to perform a large number of external perineal sections. Among them, as might naturally be expected, operations for serious deep strictures have preponderated. I have selected from my cases a series of the most interesting of which I have records. Some of the most interesting cases have not been recorded because of various circumstances surrounding the operations which have made it at least impracticable, if not impossible, to do so.

I will first present the cases in their salient features, reserving my comments for the conclusion of the article.

Case 1: Traumatic Stricture.—A lad, 15 years of age was brought to me by his parents with a history of urinary obstruction dating back one year. There was no history of gonorrhea, but of a blow upon the perineum, received some fourteen months prior to his consulting me. This injury was not followed by hematuria, but the perineum, it was claimed, was slightly swollen some days after the accident and there was a little difficulty in micturition, not sufficient, however, to necessitate medical attention. The obstruction to urination had entirely disappeared until about two months after the injury, when a slight increase in frequency and slight obstruction were noticed. This had increased to a mild degree until within three months, when an attack of retention came on. This was relieved by the passage of a catheter, but had recurred at intervals of three or four weeks since that time, the caliber of the urethra meanwhile rapidly getting smaller, until at the time of his consulting me I found it impossible even to pass a filiform into the bladder. Perineal section was proposed and performed a few days later. Much to my gratification I found that a few days of preparatory rest, restriction of diet, the administration of urinary antiseptics put the urethra in such a condition that I was enabled to pass a filiform at the time of the operation, thus simplifying subsequent operative procedures. The urethra was restored to a caliber of 30 French, a preliminary meatotomy being necessary for this purpose. The patient was up and about at the end of ten days, the perineal wound being soundly healed at the end of two weeks. Patient has since carefully followed directions regarding the introduction of the sound and is now—thirteen years after operation—in excellent condition.

Case 2: Irritable Gonorrheal Deep Stricture of Long Standing.—Referred by Dr. F. B. Norcom, of Chicago. Age, 40 years; occupation, conductor. Obstruction to urination of fifteen years, duration. Symptoms first noticed after a third severe attack of gonorrhea. No history of traumatism. Numerous attacks of retention had occurred, after which the patient would have dilatation practiced for a short time. His habits since the beginning of the obstructive symptoms had been decidedly bad. Numerous attacks of more or less severe urethritis had been experienced since the beginning of the stricture symptoms. Dilatation was commenced at once, but was badly tolerated, each séance being followed by chill and fever. Perineal section was suggested and accepted.

As the stricture readily admitted a small guide, the operation presented no especial difficulty. The stricture was found to involve the bulbo-membranous and the larger portion of the perineal urethra. Especial care was taken to thoroughly divide the indurated tissue upon the roof of the canal. The meatus was freely incised and several senile strictures divided. When the operation was completed a 36 French sound passed easily into the bladder.

This case was last seen one year after operation and was then in excellent condition, there having been no recontraction.

Case 3: Irritable Deep Stricture with Remarkable Irritability of the Vesical Neck.—Gentleman, 30 years of age, referred to me by the late Dr. A. Reeves Jackson, consulted me regarding an obstinate gleet with irritability of the vesical neck. There was a history of gonorrhea dating back some ten years. The attack, however, was apparently considerably aggravated by the patient's habit of indulgence in intoxicants. Examination shows that the penile urethra was of normal caliber, but all efforts failed to pass an instrument into the bladder. At the end of twenty-four hours another attempt was made, the patient meanwhile keeping perfectly quiet in bed. As the patient was desirous of avoiding a radical operation, attempts at dilatation were repeated at intervals of twenty-four to forty-eight hours for several weeks, with no results save the production of great discomfort to the patient. Perineal section was performed and the perineal urethra sufficiently enlarged to readily admit 35 French. Some little trouble was experienced in this case from hemorrhage for the first twenty-four hours, after which there was no further annoyance. The patient was last seen ten years after operation; the urethra was found contracted so that it would not admit a sound larger than 30 French, this size being quite satisfactory, especially in view of the fact that the patient had been somewhat careless and had had a sound introduced only at long and irregular intervals.

Case 4: Traumatic and Gonorrheal Stricture with Multiple Fistulæ.—Man, 45 years of age, referred to me for stricture involving the penile urethra at a short distance from the meatus and in the bulbo-membranous region. This stricture, originally traumatic, had become greatly aggravated by several attacks of gonorrhea. Numerous fistulæ had formed in the perineum, one of which had burrowed into the scrotum. The stricture was hard and nodular, as is characteristic of traumatic strictures as a rule. As the patient objected to operative measures and attempt was made to restore the patency of the urethra by gradual dilatation. This comparatively mild measure, however, was a failure, and at each séance the patient's life was endangered by a typical attack of chill, fever and sweat. Eucalyptus was finally administered internally and the symptoms of urinary fever disappeared. The progress of the case under the dilatation method was so slow and uncertain that a perineal operation was decided on, the urethra being restored to a caliber of 39 French. No chills were experienced after the operation and the temperature did not at any time rise over half a degree. This patient was seen two years after the original operation, at which time the urethra retained its patency. The fistula to which allusion has been made healed kindly and promptly.

Case 5: Multiple Penile and Resilient Deep Stricture.—Man, 18 years of age, referred by Dr. F. B. Norcom, consulted me for difficult micturition, which was first noticed six months previously. There was a history of gonorrhea at 15 years of age, which lasted for nearly a year and was treated by very powerful injections, prescribed by an obliging druggist. No attacks of retention had been experienced. There had been a gradual increase in the urinary obstruction. Examination revealed a contracted meatus and two penile strictures at a depth of two and one-half and four inches respectively. She largest instrument admitted by the penile strictures was a No. 20 French. I succeeded with great difficulty in passing a filiform bougie. A faithful attempt was made during a period of nearly two months at gradual dilatation. The stricture, however, proved to be very irritable and resilient, and operation was finally suggested and consented to. Perineal section and internal penile urethrotomy were performed, the urethra being enlarged to a caliber of 35 French. The patient experienced a chill on the fifth day following the operation, a sound having been passed on the fourth day. This was followed by a moderate fever and acceleration of the pulse, which rapidly subsided and did not again recur. This patient was last seen

twenty months after operation, sounds having been passed at intervals of two or three weeks, after which the patient was discharged from my care. On exploration no recontraction was perceptible.

Case 6: Deep Perineal Stricture; Multiple Penile Strictures; Severe Cystitis, Vesical Calculus. Man, 53 years of age, with a history of urinary trouble dating back to the age of 15. First attack of gonorrhea had occurred at the age of 20. He stated that he had more or less blood in the urine at intervals, and frequent and painful obstruction long before he contracted gonorrhea. He also stated that the urine had contained more or less matter before he had ever suffered any urethral trouble. He had been treated by irrigations for chronic cystitis prior to the development of his gonorrhea. His bladder had been explored on numerous occasions, but with a negative result. Urinary obstruction began six or seven years before I saw the case, and it gradually increased, but had never become marked until about one year before, at which time an attack of retention came on which was relieved by catheterization. Within six months past he has had several attacks of retention, which were relieved in a similar manner. For several months he had had recurrent slight chills with fever, and was considerably run down in his general health. On examination I found it extremely difficult to introduce a filiform into the bladder. This manipulation resulted within six hours in a very severe chill, and although there were no further attempts made for several days, the chills followed by fever recurred. In view of the condition of the bladder and the possible existence of a foreign body, a radical operation was in my opinion the only thing to be thought of. The operation proved an easy one, and under an anesthetic I was enabled to introduce a good-sized guide into the bladder. After thoroughly freeing the urethra from contractions, I passed my finger into the bladder and encountered a calculus as large as a small plum. This was extracted without great difficulty and without further cutting. It was composed of a small uric acid nucleus crusted by the usual concentric layers of phosphates. After the operation a No. 35 sound was passed into the bladder without any difficulty, slight incision of the meatus being necessary for days. Perineal drainage was kept up in this case for four weeks, during which time the bladder was treated alternately by iodoform emulsion and irrigations with nitrate of silver. Improvement in the condition of the urine was remarkable. At the end of ninety days there was scarcely a trace of pus to be found. The perineal wound was soundly healed at the end of six weeks. It is interesting to note that in this case there were no chills or rise in temperature after the operation.

An interesting feature of this case is that four years later I operated on the same patient for appendicitis, which, as far as I know, completes his surgical experience up to date. I have seen this patient within a year, and his urinary apparatus is apparently in perfect condition.

Case 7: Deep Stricture with Multiple Fistulæ.—Man, 45 years of age. Stockman: had experienced a number of attacks of gonorrhea, none of which had occurred within ten years. There was also a doubtful history of traumatism. Various attempts at treatment by dilatation had been made, with temporary relief. Peri-urethral abscess had developed some years before I saw the case and had left several fistulæ, one of which involved the scrotum. The history of urinary obstruction dated back some fifteen years. For some time the patient had been rapidly failing in his general health. Attempt at exploration had been followed by chill and sharp "urinary fever." Urinalysis revealed nothing definite regarding the condition of the kidney, but more or less advanced disease of these organs was taken for granted. After careful preparation by dieting, baths and the administration of urinary antiseptics, perineal section was performed, operation without a guide being necessary. Ether was the anesthetic used. All sinuses were carefully followed out and laid freely open. Hemorrhage from small vessels was unusually profuse, necessitating the Paquelin cautery at some of the deeper points in the divided sinuses and fistulæ. The urethra was found only after prolonged search, and at the completion of the operation the patient was greatly exhausted. He reacted fairly well, however, the urethra admitting 32 French and the perineal wound having closed, when, two weeks after the operation, anuria developed, uremia followed and death occurred within forty-eight hours.

Autopsy revealed good condition of the operative field. The kidneys were pyelo-nephritic and showed evidence of recent acute inflammation. I will remark in this connection that death is often superinduced by the anesthesia, even where chloroform is given, but especially when ether is used, but the fatal result occurs so long after the operation that the real cause is overlooked. I desire to insist on this point, because we are often unfair to chloroform. The latter drug declares itself in speedy and unequivocal fashion, as a rule, while ether often destroys life so remotely that the true cause of death is lost sight of.

Case 8: Man of 30; mechanic by occupation. Successive attacks of gonorrhea had been experienced, the last occurring one year before consulting me, and the first at about the age of 18. Stricture of the deep urethra developed at about the age of 25. Numerous attacks of retention had occurred and had been relieved with increasing difficulty. Two days before I saw him retention had come on and while straining violently to urinate he felt something give way in the perineum, after which he said he felt better for a time. On examination I was unable to get a guide into the bladder. The scrotum and perineum were brawny, discolored and infiltrated. Septic cellulitis was evidently impending. The temperature was 101.5 degrees F. and the pulse 120. The general condition was fairly good. Perineal section without a guide was at once performed and free incisions made into all swollen points. Several penile strictures of moderate caliber were left for future attention. Free drainage by iodoform gauze and perineo-vesical tube was provided for. The operation was well borne and the subsequent course of the case unexceptionable. There was some sloughing of the perineo-scrotal tissues, but the application of charcoal and iodoform poultices soon brought about a healthy condition. Three weeks later the penile urethra was restored to a caliber of 35 French. At the present time, two years after the operation, the patient easily passes a 31 French upon himself at long intervals.

Case 9: Impermeable Deep Stricture Urethral Calculus. The patient, a young colored man of 30 years of age, was referred to me by Dr. J. G. Reid, of this city, for operation upon a deep perineal stricture of gonorrheal origin. The stricture had existed for some ten years and during this time had given rise to attacks of retention from time to time, but there had been no serious difficulty of micturition until within a year. In operating on this case I found it absolutely impossible to pass a guide and was compelled to operate without it. The operation proved a tedious and bloody one, and I was seriously contemplating supra-pubic section and retrograde catheterism, when I succeeded in entering the bladder. The patient suffered from pronounced urinary fever for about ten days after the operation, the condition evidently being of a septic character. Recovery, however, finally ensued and the patient is now, a year after the operation, in good condition. Subsequent history unknown. At the time he was discharged from my care he took a sound of caliber 32 French with comparative ease.

An interesting feature in this case was a calculus the size of a pea which was found in the dilated portion of the urethra behind the stricture at the bulbo-membranous junction. It was composed of uric acid nucleus with phosphatic laminæ. There was no history of renal colic; hence the stone probably formed in the bladder and lodging upon the stricture became enlarged by subsequent accretions of phosphatic deposit. Another noteworthy point was the extreme dilatation of the veins ramifying in the mucous membrane about the vesical neck, a condition which I have observed in one other case of a similar character.

Case 10: Impermeable Deep Stricture with Chronic Prostatic Abscess Recontraction and Reoperation. Gentleman, 45 years of age, referred to me by the late Dr. A. Reeves Jackson for the relief of retention due to surgically impermeable stricture in the perineal portion of the urethra. There was the usual history of a succession of attacks of gonorrhea, the most of which were in early youth, none having been experienced for some years. The urinary difficulty had existed for several years. There was a history of recurrent prostatic abscess. The patient's general health was considerably impaired in spite of a natural rugged constitution. Perineal section was suggested in this case, and the patient was afterward operated upon by his own physician with the assistance of several other surgeons of recognized ability. Some weeks after the operation I was called to see the patient in consultation, and found that it was with extreme difficulty that sounds could be introduced. As my experience has been that where sounds are difficult of introduction soon after a perineal section, reoperation is necessary, I made the suggestion to the attending physician, who not only accepted it but courteously turned the case over to me for operation. I operated a few days later and restored the caliber of the urethra from meatus to bladder to 36 French. The case did well and was discharged from the hospital at the end of about four weeks. No further trouble was experienced for several months, when the patient consulted me for an attack of acute retention of urine. A linear obstruction had reformed at the bulbo-membranous junction as a consequence of inattention to the passage of sounds after operation, the patient having been upon the road for some

weeks and compelled to neglect himself. It is possible that the recurrence was favored by several pockets which existed in the prostate as a result of the old-time prostatic abscesses. These pockets I laid open quite freely at the time of the operation, but on operating the second time I found that one was still perceptible, requiring a second division of its upper wall. An attempt was made to relieve his condition by dilatation of the stricture and irrigation of the bladder, but without success, retention with overflow coming on just as soon as the use of the catheter was stopped. Another operation was proposed and consented to. A very slight linear band was found at the point of obstruction and a reformation of one of the pockets was found to have occurred. The urethra was cut to a caliber of 40 French, the anterior urethra which had been freely cut at the previous operation having maintained its patency and taking without much difficulty a 40 French, although its caliber had been increased at the previous operation only up to 36. The urethra, however, was quite supple and the contractions which previously existed, having been removed, were readily dilatable up to 40. The progress of the case after the second operation was uneventful. The patient is now, some six months after the operation, in excellent condition. There is, however, at this time a slight tendency to recontraction, the patient having allowed himself to go two months without the introduction of a sound in spite of the most impressive warning of the danger of neglect.

Case 11: Irritable Deep Stricture of Large Caliber. This case presents some rather peculiar features. A man, 25 years of age, consulted me regarding an obstinate gleet which was found to be dependent upon several penile strictures. An obstruction of the deep urethra was also noted, but inasmuch as the stream of urine was alternately reduced in size and free during micturition, the deep obstruction was considered to be chiefly spasmodic. The entire urethra was exquisitely sensitive, so much so that it was not considered wise to attempt the passage of an instrument into the bladder. Internal urethrotomy was performed and the penile urethra restored to a caliber of 37 French. Within a week after the operation it was found that a 20 French sound could be introduced into the bladder, but the deep urethra was still quite sensitive and there was a distinct spasmodic grasping of the instrument by the deep urethral muscles during its withdrawal. Exploration with the rubber bulbs showed a distinct linear contraction in the bulbo-membranous junction. An attempt was made for a period of nearly three months to restore the caliber of the deep urethra by gradual dilatation, but without success. After nearly every introduction of the sound intense irritation of the vesical neck was produced. This vesical irritation could not be prevented or controlled by any method of treatment. The patient's gleet which had been very annoying continued, and perineal section was finally decided upon and performed with a most gratifying result. When dismissed a 35 French sound could be readily introduced into the bladder. I have not seen this patient since six months after the operation, but a letter received three years later informs me that a 30 French is readily introduced into the bladder, despite the fact that the patient has not been particularly assiduous in his care of the urethra. The gleet in this case proved quite stubborn and persisted for some months after the operation, but finally disappeared. The patient informed me that he has since had a slight attack of urethritis from indubitable infection, but that no recontraction of the urethra was noticed after its subsidence.

Case 12: Irritable Deep Stricture with Perinephritic Abscesses.—Man, 28 years of age, salesman. This man had an irritable spasmodic stricture for some years. The stricture was located deeply and was of gonorrheal origin, the patient having had several attacks of urethritis. The caliber of this stricture was by no means large, but it was so irritable and resilient, and the chronic inflammation and sepsis behind it were so marked that recurrent attacks of vesico-prostatic inflammation were experienced. I advised perineal section, which was refused, and I consequently did the best I could for the case by dilatation. I found it practicable to introduce sounds the size of 20 French, but all further attempts at dilatation resulted in chills and fever. This case subsequently underwent a most extraordinary course. A perinephritic abscess formed on the left side, and subsequently one on the right. These were treated by free incision and drainage, and were evidently due to infection from the deep urethra. Why the kidney should escape serious disease I am unable to say.

A similar case came under my observation at one time in which, through inattention on the part of the patient, there was a condition of suppuration of the kidney. This case was afterward operated on by Dr. Tiffany, of Baltimore, for double perinephritic abscess, and the patient eventually died from some other condition which, so far as I could learn, was independent of the old-time genito-urinary difficulty.

Some time after the development of the perinephritic abscesses (in the case under consideration) the patient consented to an operation which was performed and followed by prolonged perineal drainage. The urethra was restored to a caliber of 35 French, several penile strictures of large caliber receiving attention at the same time, and meatotomy being performed. The patient was up and about at the end of three weeks, and when last heard from (one year after the operation) was in excellent health.

Case 13: Impermeable Stricture at the Peno-scrotal Angle—Application of the "String Saw" Principle to the Urethra. Man, 25 years of age, with a history of gleet of four years' duration. For about one year the patient had noticed obstruction to micturition; this had gradually increased until the stream became so small that evacuation of the bladder required from fifteen to twenty minutes with severe straining effort. Examination revealed in this case a narrow meatus and a tortuous stricture which practically occupied the entire penile urethra. The ballooning of the perineal urethra during micturition suggested that the obstruction in all probability erminated at the peno-scrotal angle. After several seances I succeeded in passing a filiform bougie. Retention followed and an emergency operation became necessary. Under anesthesia I attempted to pass a guide through the urethra for the purpose of performing internal urethrotomy, a proceeding which I found impossible of accomplishment, the passage of the instrument being obstructed at a point below the peno-scrotal angle. I proceeded to perform perineal section. I found the perineal portion of the urethra extremely dilated behind the obstruction a little anterior to the peno-scrotal angle. The deeper portion of the urethra was free from contraction. After repeated attempts I succeeded in passing a filiform bougie from behind forward. I found it impossible to pass the urethrotome upon this bougie as a guide without incurring the danger of serious injury to the urethral walls. It so happened that I had been recently perusing Dr. Abbe's interesting cases of division of stricture of the esophagus by means of a string, so the idea occurred to me that the same method could be adopted here. I therefore tied a silk ligature to the bougie and drew it from below through the urethra. Drawing the penis well up over the abdomen, I then proceeded to draw the string back and forth with a sawing motion through the stricture, with the result that in a few seconds I was enabled to draw the cord to quite a good size through the canal. A few seconds later the cord was withdrawn and the canal rapidly dilated with bougies until I could readily introduce the blades of the urethrotome. All of the contractions were divided to a caliber of 35 French. The subsequent history of this case was uneventful. The patient at the present time, six years after operation, is in excellent condition and passes a 31 French upon himself with perfect ease.

Case 14: Tortuous Perineal Stricture. Gentleman, 38 years of age, consulted me regarding a hard, tortuous perineal stricture. There was a history of a number of attacks of gonorrhea. The patient's habits were very intemperate and there was a distinct history of gout. The urine, according to this patient's account, had been from time to time loaded with urates and uric acid for a long period of years. Perineal section was performed without a guide being necessary, as not even a filiform could be introduced. The operation proved quite tedious. The caliber of the urethra was restored to 28 French. Convalescence was uninterrupted. The patient was seen two years after the operation and very little recontraction was found to have taken place, the urethra still admitting 35 French. Recent advices from this patient state that there has not been any further recontraction, the patient now being in excellent health.

Case 15: Resilient Deep Stricture of Moderately Large Caliber, with Fistula. Man, 40 years of age, consulted me regarding a small perineal fistula of several years duration. The patient gave a history of several attacks of gonorrhea, the last of which had been experienced some four years before he consulted me. During the progress of the last attack of gonorrhea a small abscess had formed in the perineum. This was opened, much to the patient's discomfiture, and it was found to communicate with the urethra. A permanent fistula eventually formed. There had been no marked obstruction to urination at any time, although the patient was subject to attacks of frequent and rather painful micturition. A moderate amount of gleet was present. Exploration revealed a contracted meatus and a hard resilient bulbo-membranous stricture of fairly good caliber. Systematic attempts at dilatation were made but without effect, the perineal stricture proving irritable and resilient and consequently resistant to treatment.

Perineal section was decided upon and performed, the caliber of the urethra being restored to 35 French. The patient was kept under observation for about a year, but no examination has since been made. At the time the case was last seen there had been no recontraction. The patient was in excellent health.

Case 16: Multiple Penile and Perineal Strictures.—Young man, 24 years of age, was referred to me by Dr. J. N. Dixon, of Springfield, Ill., for operation for a deep urethral stricture which had become obstinate and intractable. Exploration revealed several strictures in the penile urethra and at the meatus in addition to the deep contraction. Although persistent efforts were made, even filiform bougies failed to pass for some days, during which time the patient was kept confined to his bed, rigid dietetic precautions being taken and hot sitz baths prescribed. When the operation was finally performed there was little difficulty in getting a small guide into the bladder. The normal urethra in this case was very large, and perineal contractions were enlarged to a caliber of 40 French. The subsequent course of the case was very favorable, and when the patient was discharged from the hospital he could still take a caliber of 38 French. At the present time, about two years from the date of operation, there has been no recontraction.

Case 17: Resilient and Irritable Perineal and Penile Strictures with Urinary Fistula.—Young man, 24 years of age, consulted me regarding a stricture which he referred to an attack of gonorrhea experienced at the age of 18. Several slight attacks of urethritis had occurred since. On inquiry a doubtful history of injury at the age of 15 was elicited. Examination in this case showed a stricture just within the meatus and a surgically impermeable contraction at the bulbo-membranous junction. There was a small fistula at the perineo-scrotal angle, which could be traced back to the bulbo-membranous region by exploration of the tract with a filiform bougie. Being desirous of avoiding a cutting operation the patient submitted to frequent attempts at dilatation of the stricture for several weeks, at the end of which time a filiform bougie was passed. I succeeded in dilating the stricture up to a caliber of 10 French, when it became very irritable and resilient. All attempts at further dilatation caused more or less sharp attacks of urethritis with coincidental urethral chill. An operation was suggested and consented to. The case was cut to a caliber of 36 French. This case was seen at the end of a year and no recontraction had occurred, the patient passing from 30 to 34 French upon himself without the slightest difficulty.

Case 18: Extensive Deep Cicatricial Stricture with Multiple Fistulæ.—A man, 40 years of age, referred to me by Dr. E. P. Murdock. This case was referred to the Railway Brotherhood Hospital for surgical relief and was kindly referred to me. There was a history of numerous attacks of gonorrhea, none of recent date. Numerous urinary abscesses had occurred in the perineum with the usual resulting fistula. Perineum was hard and almost cartilaginous in consistency throughout its entire extent. Several fistulæ had burrowed in various directions, some of them appearing as far back as the ischio-rectal fossa upon one side, upon the other a fistula was present burrowing well out upon the nates. The penile urethra was free from contractions except at the meatus. Treatment by gradual dilatation was not to be thought of in this case, hence perineal section was determined upon. Under ether I succeeded in introducing a small perineal guide with a central groove, this greatly simplifying the operation. The stricture was found to involve practically the entire perineal urethra down to the bulbo-membranous junction. Free division was made, the roof of the canal being found to be extensively infiltrated by cicatricial deposit. The fistulæ were laid freely open, and a large-sized sound was now readily introduced into the bladder. On the fourth day after the operation examination of the perineal wound showed several bridges of cicatricial tissue upon the roof of the urethra which had escaped division. These were freely divided. The subsequent history of the case was uneventful and the rapidity of healing was quite remarkable considering the extensive incisions which were demanded by the fistulous tracts in various directions. I have not heard from this case since he was dismissed from the hospital, at which time Dr. Murdock informed me he was in excellent condition.

Case 19: Multiple Perineal and Penile Strictures.—Man, about 45 years of age, patient of Dr. P. H. Anderson. This patient had had numerous attacks of gonorrhea with resulting intractable penile and perineal strictures. At the time Dr. Anderson called me in consultation the patient had been troubled for some days with attacks of retention, which were relieved with extreme difficulty. There was some elevation of temperature, and while it was possible to introduce very small bougies, the stricture was so hard and cartilaginous and the danger of urinary fever apparently so great that I believed perineal section to be the wisest course. This was accordingly performed and the urethra restored to a caliber of 35 French. The operation was not attended by any particular difficulty. Dr. Anderson informs me that considerable fever followed the operation. The case finally recovered, but after a somewhat tedious convalescence. I understand that at the time the case was dismissed by Dr. Anderson it was possible to introduce sounds of fairly good size. The present condition of the case is unknown.

Case 20: Impermeable Deep Stricture, Secondary Suture of Perineal Wound.—Man, 40 years of age, referred to me by Dr. Van Riper, of New Carlisle, Ind. This case was distinctly traumatic, being referable to an injury experienced at about the age of puberty. There was a history of recurrent attacks of retention, and from time to time mild attacks of urethritis. The patient had greatly emaciated and was suffering from pronounced urinary fever. Experience had shown the futility of dilatation, and perineal section was suggested. It was found impossible to introduce a guide even under anethesia. The meatus was contracted and a deep stricture was found in the membranous urethra. There was a moderate amount of difficulty in finding the proximal portion of the urethra after opening the perineum. After a somewhat tedious dissection, however, this was accomplished. The urethra was restored to a caliber of 38 French. The patient did badly for a week or ten days after the operation, and the wound was very slow in granulating. At the end of three weeks a permanent fistula (perineal) seemed to be highly probable. Two silkworm gut shotted sutures were therefore introduced into the perineum, bringing the sluggish granulating surfaces in close apposition. A retained catheter was placed in the urethra for forty-eight hours, at the end of which time it produced so much vesical irritation that it was removed. Not a drop of urine escaped via the perineal fistula after the suturing, and within a week the perineal opening was soundly healed. At the present time, four months after the operation, I find a 35 French passes with great ease. The patient has regained his health and strength. This case aptly illustrates the serious constitutional disturbance which sometimes result from pronounced stricture.

Case 21: Deep Stricture with Retention.—Young man, 23 years of age, occupation laborer. This patient denied venereal infection. He stated that he was thrown from a wagon at the age of 18 and landed in a sitting position upon some rocks that lay in the roadway, which was followed by bruising of the buttocks and perineum. The buttocks were severely contused, but according to the history there was a moderate amount of perineal swelling and ecchymosis. The urine was passed with moderate ease for the first two or three days. After the operation inflammation and additional swelling of the injured structures came on, with a resulting attack of retention. This was relieved by the introduction of the catheter several times daily for about ten days, after which the urine was passed in the normal manner. Sounds were not passed subsequently until urethral obstruction developed and the patient found some difficulty in passing water. Instruments were passed thereafter at varying intervals, but with increasing difficulty and of smaller size. At the time the patient consulted me it was found impossible to pass anything larger than a filiform. The urine was trickling away constantly. For several months the patient had experienced a chill, followed by some fever, which came on every day or two. The temperature at the time I first examined him was normal. The anterior urethra was found free of obstruction, the meatus being more than ordinarily capacious. Perineal section was advised. Under anesthesia a moderate degree of dilatation was secured, and as a consequence it was found possible to introduce a grooved guide of moderate size, upon which the stricture was freely divided with no difficulty whatever. There was found to be a considerable amount of cicatricial tissue impinging upon the roof of the canal. This was freely divided, the urethra being restored to a caliber of 35 French, which was approximately the patient's normal size. The usual course of after-treatment was resorted to. The patient was heard from six months after the operation and was still passing Nos. 29 to 32 French weekly. There was no chill or elevation of temperature in this case after the operation.

Case 22: Deep Stricture with Retention; Retrograde Catheterization.—Patient 40 years of age, commercial traveler, with a history of repeated attacks of gonorrhea. He had within two weeks experienced several attacks of retention. When I was called I at first succeeded in passing a fine catheter and relieving the retention. Within twenty-four hours, however, the obstruction increased to such an extent that I found it impossible to introduce an instrument. As the patient objected to perineal section, I aspirated several times in the hope of re-

lieving the retention, and after a time treating the case by dilatation. At the end of forty-eight hours, finding my efforts unsuccessful, I suggested an operation, which was consented to. I found it impossible to introduce a guide, even under an anesthetic. The meatus was markedly constricted. There were several strictures in the anterior urethra. On opening the urethra and perineum I found the urethra was tortuous, and so markedly impinged upon by both old and recent exudate, that after a prolonged search of the urethra I deemed it advisable to perform retrograde catheterization through the suprapublic opening. This was quickly performed, the guide passed from above. On cutting down upon the point of the guide in the perineum, I was enabled to open the urethra posterior to the stricture with great facility, and followed my usual custom of free division of all constricting bands, dividing the roof of the urethra with especial freedom. The anterior urethra was freed from contraction with a dilating urethrotome. Through and through drainage from supra-pubic opening to perineum was instituted, and strands of gauze drawn from the meatus to the perineal wound, through which they were allowed to emerge. On the fifth day the tube was removed, and the case subsequently treated by the systematic introduction of sounds. At the end of three weeks both supra-pubic and perineal wounds were closed. Patient was dismissed from my immediate care at the end of the fourth week. There was a slight rise of temperature in this case, which, however, had not at any time exceeded 100 F. I have not seen this case subsequently, but the patient writes me that he has not been compelled to consult a surgeon since, as he is enabled to pass a 30 French into the bladder with the greatest ease.

Case 23: Deep Stricture with Fistulæ and Sinuses.—Man, about 43 years of age, stock clerk by occupation, giving a history of numerous attacks of gonorrhea, the last one of which occurred about six months before consulting me. During the last attack he had used very strong injections and he thought with deleterious effects. He stated that he had had for some years, exactly how long he did not know, more or less obstruction to urination. On several occasions he had had attacks of retention from what was termed by several physicians spasmodic stricture. These attacks of retention yielded readily to opiates and hot baths, which according to his story, had been very judiciously used. During the course of his last gonorrhea he had had no distinct attacks of retention, but there had been a progressive diminution in the size of the stream of urine. There is no history of trauma. Some three months before I saw the case a small abscess had formed in the perineum, which had been opened with resulting urinary fistula. Several other small abscesses had formed in the neighborhood at first, so that when I saw the case the perineum was pretty well riddled with sinuses and fistulæ, through some of which the urine escaped in considerable quantity during micturition. The patient's general health had remained excellent. On exploration I succeeded in introducing a filiform bougie into the bladder, and within three weeks I succeeded in dilating the stricture up to No. 35 French. The stricture now became resilient and irritable, and all efforts at further dilatation produced well-marked chill and fever. In view of the behavior of the stricture under manipulation and the presence of the fistulæ in the perineum, it seemed advisable to perform perineal section. My suggestion to this effect was accepted. The operation presented no special features of interest. There was no difficulty in introducing a small guide on which the stricture was freely divided. All sinuses and fistulæ in the perineum were thoroughly laid open. Several strictures in the penile urethra were freely divided, the caliber of the urethra being restored to 40 French, a size which the canal readily admitted after the urethrotomy. Perineal drainage was instituted for four or five days, at the end of which time the perineal tube was removed and the patient allowed to pass the urine through the wound. There was at no time any elevation of temperature. On the fifth day sounds were introduced, this being repeated every three or four days thereafter until the end of the third week, after which time they were introduced once every fifth day. The perineal wounds were soundly healed at the end of the fourth week. I saw this patient a short time since and found the urethra a little smooth and free from contractions, there being no difficulty experienced in introducing a 35 French.

Case 24: Traumatic Rupture of Urethra; Extravasation of Urine. A boy, 14 years of age, while climbing a fence slipped and fell a distance of five feet, striking astride an iron railing. He sustained a severe contusion of the perineum, and at the same time an injury of one testicle. There was a moderate amount of shock at the time and the lad stated he vomited shortly after the injury. In about half an hour, the pain having passed off, he rejoined his playmates. A short time thereafter he experienced an intense desire to urinate, and while straining to perform the act he felt something give way in the perineum, and there was at the same time a moderate escape of blood which, from the history, was probably mingled with more or less fluid from the meatus. A neighboring physician was called who, after numerous unsuccessful attempts to catheterize, relinquished the case, suggesting that a surgeon be called. I saw the case about eight hours after the injury and found the patient comfortable, he having received a hypodermic of morphia a short time before. The perineum was greatly swollen and ecchymosed, the scrotum being involved in the infiltration. I made no attempt to catheterize, but passed a medium-sized sound down to the penile portion of the urethra and performed perineal section upon it. I found the urethra extensively lacerated and the proximal end of the divided urethral tube with considerable difficulty. I endeavored as far as possible to unite the lacerated portion of the urethra with fine catgut sutures. A hard rubber drainage tube was inserted into the bladder, the wound being packed about it in such a manner as to facilitate free drainage. The scrotum and perineal tissues were freely divided by multiple incisions, permitting the escape of the extravasated urine. The usual antiseptic dressings were applied. Considering the extent and nature of the injury in this case, it was rather remarkable that there was no elevation of temperature following the operation. The favorable course of the case was uninterrupted. At the end of four weeks the patient was up and about. At the present time, one year after the operation, the patient's urethra admits a No. 30 French with perfect ease, and there appears to be no tendency to contraction at the present time.

Case 25: Deep Organic Stricture: False Passages; Perineal Fistulæ Closed by Plastic Operation.—Man, 45 years of age, with a history of repeated attacks of gonorrhea. Had been troubled with organic stricture since the age of 30. This was dilated from time to time and gave no trouble until he was about 40 years of age, when an attack of retention came on. This was relieved by the catheter and the stricture treated for a short time. He again relapsed into the customary negligence of his case and was practically untreated for several months, when recurrence of the retention occurred. He stated that he had had seven or eight attacks of retention at various times. On several occasions it was found impossible to introduce an instrument into the bladder; the condition subsequently became spontaneously relieved. On at least two occasions the patient stated that false passages had been made, an assertion that was verified by the conditions which I found on examination. It has rarely been my fortune to see such a case with such extensive and tortuous strictures as was present in this man. The meatus had been greatly deformed by a phagadenic chancroid with resulting meatal stricture. Beginning about an inch from the meatus the canal might be said to be completely strictured clear to the musculo-membranous junction. Careful examination revealed at least two false passages, one of which opened into the penile urethra and the other at about the perineo-scrotal angle. As the urine had been dribbling away as a consequence of overflow for several weeks, a radical operation seemed urgently necessary. Perineal section was performed without a guide. The perineal portion of the urethra was found to be the seat of an extensive stricture involving its whole length. So extensive was the induration that the urethra was, as the patient expressed it, "very much like a gas pipe," as felt through the perineum. After opening the perineum, I attempted to pass a filiform guide from the meatus to the perineal wound, but found it impossible to do so. By retrograde catheterization, however, I finally succeeded in passing an instrument through the entire penile urethra. A strand of fine silk ligature was tied tightly to the perineal end of the filiform and drawn through the penile urethra from behind forward. A larger and stronger ligature was now fixed to the first and pulled through in the same manner. By a sawing motion—an imitation of Abbe's saw method—the canal was soon freed sufficient to enable a bougie No. 8 French to be drawn through. Increasing sizes of bougies were now introduced until the urethrotome could be passed easily, and the entire length of the urethra was divided upon its roof. The meatus was at the same time freely incised. The canal was thus restored to a caliber of 35 French. My usual perineal drainage and iodoform tamponade were applied. The patient did very nicely until the fifth day, when an abscess formed in the scrotum. The incision had been necessarily made pretty well forward, thus facilitating infection from the operative field, which was necessarily septic, in spite of efforts to obtain asepsis. On further examination I found that the false passage, already alluded to as opening anteriorly into the penile urethra, opened posteriorly into the scrotal tissues. The subsequent

course of the case was very annoying. Numerous operations on tissues of the scrotum were necessary to obtain free drainage. The posterior portion of the perineal wound healed very kindly, but in spite of all efforts to bring about repair, a fistula resulted in the anterior angle of the wound. After about five months' futile efforts to obtain union, the suppurative condition of the scrotum having meanwhile resolved itself into a single sinus at the site of the old false passage, I performed a modified Szymanowski operation on the fistula with, I am pleased to say, the most gratifying results. The patient is now—at the end of two years—able to pass a 28 French with comparative ease, and is in better health than he has been for years.

Case 26: Impermeable Deep Stricture; Retention with Overflow; Combined Supra-pubic and Perineal Section; Through and Through Drainage.—Man, 35 years of age, was referred to me by Dr. Liddy of this city, suffering from retention of urine of several days' duration. Overflow had occurred. The patient was in very bad condition, having been but a few weeks convalescent from a severe attack of pneumonia. There was a history of gonorrhea some eight or ten years previously. The urinary obstructions dated back several years and had been treated with greater or less persistency at spasmodic intervals. On examination I found the bladder so markedly distended that it was almost on a level with the umbilicus. The escaping urine was strongly ammoniacal. The patient had a temperature of 101 degrees and was greatly prostrated. After an hour's careful endeavor to enter the bladder without success supra-pubic aspiration was resorted to and over a pint of ammoniac urine withdrawn. Perineal urethrotomy was proposed and consented to, but at the time of the examination it was nearly dark, consequently operation was postponed until the next day. The patient was seen the following day and immediate operation was declined, with the understanding that it should be performed the following morning in case a second aspiration failed to give permanent relief. I sent the patient to the hospital with instructions to prepare for the operation. The operation proved one of the most tedious that I had met with in my experience. No guide could be introduced. The stricture was extremely tortuous and the perineum extensively infiltrated and indurated. After an hour's fruitless search, during which considerable hemorrhage was encountered, the patient began to act badly under the anesthetic, and I followed the plan which I believed to be best in such cases, and opened the bladder supra-pubically. Retrograde catheterization enabled me to secure a perineal guide, when I found that I had just missed cutting through the stricture into the proximal side of the urethra. The subsequent steps of the operation were quite simple; several slight contractions of the penile urethra were divided and the urethra restored to a caliber of 40 French. Through and throug drainage was temporarily instituted. Infection of the cavity of Retzius with considerable subsequent sloughing occurred. There was a succession of slight chills, temperature rising at times as high as 102 degrees F. for several days. At the end of this time the sloughs began to clear away from the supra-pubic wound and the patient's general condition rapidly improved. At the end of about five days perineal drain was removed, and it was found that incontinence of urine existed. This lasted for about two weeks. At the end of three weeks, however, the supra-pubic opening had entirely closed. The perineal wound was practically healed and the patient had regained control over the bladder. He was last seen six weeks after the operation, at which time he expressed himself as being in better health than he had been for fifteen years, and stated that for the first time in many years he was enabled to do his work in a satisfactory manner. The subsequent history of this case is quite sad. Some four weeks after leaving the hospial the patient, who was employed upon a railroad, was caught between two freight cars and instantly killed.

Case 27: Perineal Stricture of Gonorrheal origin with Perineal Fistula from Previous Operation.—Man, 38 years of age; occupation, dry goods merchant; suffered from numerous attacks of gonorrhea, first occurring about the age of 20. Ten years later stricture developed. This was followed by successive attacks of retention of urine, which were relieved by catheterzation. An attack of retention finally came on, for the relief of which an attempt was made to pass a catheter, but without success. The practitioner in charge of the case did an emergency operation on the perineum and succeeded in relieving the retention, but apparently did not incise the infiltrated tissues in and about the strictured portion of the canal sufficiently freely. Patient stated that at no time subsequent to the operation was it possible to pass a sound larger than a No. 15 French. The perineal wound remained open and a permanent fistula formed as a consequence, in all probability of the lack of thoroughness of the original operation. The penile urethra was extensively strictured. Three distinct points of well-marked contractions existed, it being impossible to pass a bougie larger than a No. 10 French. The patient consulted me for the relief of the fistula, supposing that his strictures had been cured by the previous operation. I divided the strictures in this case to No. 35 French, a sound of this size being readily admitted into the bladder. The case progressed nicely, excepting that there was a perineal fistula which absolutely refused to heal, the opening corresponding with that of the original fistula. I secured union in this case in a very simple manner by cauterizing the fistulous tract with equal parts of tincture of iodin and carbolic acid, after which two strands of silkworm catgut were passed in such a manner as to include the fistulous tract well down to the urethra, just external to the mucous membrane of the canal. These sutures were shotted and although no retained catheter was used the fistula at the end of two weeks was soundly healed.

This patient was last seen six months after the operation, at which time a 32 French could be readily admitted into the bladder. The patient was entirely free from any symptoms referable to the genito-urinary tract.

Case 28: Multiple, Penile and Perineal Stricture: Chronic Cystitis and Retention with Overflow.—Man, 21 years of age, had an attack of gonorrhea at the age of 17, from which he had never recovered, the gleet having been continuous since the original infection. Symptoms of urinary obstruction had existed about a year. Chronic cystitis and follicular prostatitis had resulted from deep infection. At time I first saw the patient retention with overflow had existed some days. The patient was very much run down, with a moderate amount of urinary fever, temperature rising to 101 in the evening. Recurrent chills occurred every few days, followed by the usual fever and sweating. Temperature in the morning was normal, but the greater part of the time there was more or less fever, there being an exacerbation following the chill. Although the condition of the patient was by no means promising, perineal section was proposed. I deferred the operation, however, for twenty-four hours, at the end of which time I gave the oil of eucalyptus in 10-drop doses every three hours with, it appeared to me, a distinct effect upon the temperature. I found it possible to introduce a filiform guide into the bladder. The meatus and several penile strictures were divided; on account of the condition of the bladder prolonged drainage was instituted, a hard rubber drainage tube being used for two weeks after the operation. The patient bore the operation very well, and contrary to what might have been expected did not develop chill at any time thereafter. The evening temperature, however, remained at 101 F. for perhaps four or five days and gradually fell, at the end of ten days being perfectly normal. The urine gradually became clear under alternate treatments of iodoform emulsion and nitrate of silver solution.

I have not heard from this patient since a few weeks after he was dismissed from my immediate care. At that time, however, he was still in excellent condition, was regaining his weight and strength very rapidly, and was a thorough convert to the efficacy of perineal urethrotomy.

Case 29: Recent Traumatic Stricture of the Urethra with Extravasation.—Man, 35 years of age, laborer by occupation, received a severe kick upon the perineum during a drunken brawl. Retention came on within a few hours, and according to the history there was evidently at that time considerable extravasation with a good deal of ecchymosis and swelling of the scrotum and perineum. The physician who was called succeeded in introducing a catheter and relieved the tension, catheterization being repeated several times for a week, at which time the patient could pass his urine without assistance, regarding himself entirely well. The physician omitted to apprise him of the necessity of subsequent dilatation of the urethra, so the patient neglected himself and about six weeks after the original injury he noticed that the flow of urine during micturition was beginning to become obstructive. This obstruction rapidly increased until finally an attack of retention came on which the physician was unable to relieve. At the end of thirty-six hours he consulted me, and I found that I could not introduce an instrument into the bladder even under an anesthetic, the stricture being recent and a traumatic one. The condition of the genito-urinary organs being therefore inferentially good, I proposed perineal section. I found that the urethra was completely closed with a fairly well organized exudate, which extensively involved the perineal portion of the urethra. The cord-like band of cicatricial tissue in the center of the perineal urethra appeared to indicate the site of the laceration of the perineal deviation of the urethral walls. The anterior urethra was perfectly normal. The stricture in this case was divided to a caliber of No. 32 French.

which was approximately the normal caliber of the canal. The patient was under my observation for about eight weeks, at the end of which time the urethra admitted a No. 30 sound with perfect ease. The perineal wound was soundly healed at the end of the tenth day. I have had no further information in regard to this case.

Case 30: Linear Stricture of Large Caliber; Fatal Hematuria, probably of Malarial Origin.—A man 40 years of age, a commercial traveler by occupation, consulted me regarding follicular prostatitis and vesical irritation of many years standing, which had followed an old-time gonorrhea. There was also a history of traumatism of the deep urethra experienced during boyhood. The patient had had syphilis and was suffering from chronic malarial poisoning, he having had from time to time quite severe chills, followed by the usual phenomena of ague. Examination showed an extremely irritable urethra, with a stricture in the bulbo-membranous junction. This was irritable, resilient and elastic and admitted a 26 French, but with considerable difficulty and pain. There was a moderate amount of vesical infection; there was no history of hematuria. The patient was extremely neurasthenic. This case had been treated by dilatation from time to time for a period of years, and inasmuch as I believe gradual dilatation to be ineffectual in cases of this kind, I suggested urethrotomy. According to my usual custom I counseled against internal incision of the stricture, believing as I do that in such deep contractions external section is by far the safer. The operation was consented to and duly performed. There were no special features worthy of mention in connection with the operation. The amount of hemorrhage was trifling; the extent of the incision in the perineum and urethra much less than in the usual perineal urethrotomy. There was slight oozing of blood for the first twenty-four hours, and a moderate amount of hematuria from reflux of blood from the tube back into the bladder. This disappeared in several days; the urine was clear; the dressings were changed on the third day and the tube removed, after which time the urine was passed via the ordinary wound. Sounds were passed up to the size of 35 French without provoking hemorrhage, at which time the patient was passing urine quite comfortably through the normal channel. The patient was attacked by a congestive chill, followed by a temperature of 106, with the usual typical sweat; there was at the same time considerable vesical tenesmus; the urine became very scanty and high colored, and within a few hours contained a small amount of blood. Under appropriate treatment the patient became very comfortable by the next day, the temperature within thirty-six hours subsiding to normal. The hematuria, however, continued to a slight extent. At the time the chill came on the patient had a severe nose bleed, and within a few hours several attacks of vomiting, during which blood was vomited. The patient appeared very much alarmed about his condition and seemed to be of the opinion that a fatal issue was impending. I laughed at his fears, as indeed I felt myself justified in doing, as the death of the patient was farthest from my thoughts. On the evening of the tenth day the patient was suddenly taken with vesical tenesmus, apparently due to an accumulation of fresh clots in the bladder. These clots were extruded with such force as to tear open the perineal wound, and following the clots came a profuse discharge of urine and blood. The bladder was frequently evacuated, but was rapidly refilled. Within the space of half an hour the patient had lost an enormous quantity of blood and became almost exsanguinated. I was sent for, but the hemorrhage had apparently stopped, the bladder being evidently filled with clots. I put the patient under the influence of opium and remained with him during the night with the understanding that if necessary a suprapubic section with tamponing of the bladder should be performed in daylight. The patient passed the night quite comfortably. There being no attempt at micturition, there was no hemorrhage. When he awoke in the morning a straining effort at micturition came on, a catheter was passed, with the result that a free hemorrhage with expulsion of large clots began. I immediately opened the perineal wound and tamponed it tightly, then placed the patient on the table and performed suprapubic section. I found the bladder full of clots. The patient acted so badly under chloroform that I found it impossible to ascertain the precise source of the hemorrhage, and so hurriedly tamponaded the bladder and returned the patient to bed. There was profound shock, and the shock in combination with the immense loss of blood he had sustained proved fatal in about three hours after the operation. Transfusion with saline solution and hot rectal enemata containing stimulants, with hypodermic injections of digitalis and strychnia failed to bring about reaction. No autopsy was permitted, which is unfortunately too often the case in private practice.

In reviewing this case I am confident that the hemorrhage was due to causes only indirectly connected with the operation. In this, I think, the reader will agree, when we take into consideration the fact that the course of the case was that of the ordinary successful perineal section up to the time of the development of the congestive chill above described.

Case 31: Irritable Deep Stricture; Repeated Operations.—Man, 45 years of age, referred to me by Dr. F. C. E. Mattison, of this city. There was a history of urinary obstruction of some years duration. This had increased to such an extent that there appeared to be urgent necessity for operative interference. A continuance of attempts at dilatation was advised, but as it subsequently transpired without success. As the patient understood clearly that perineal section would be necessary in case dilatation failed, this was subsequently performed. Through the courtesy of Dr. Mattison I was called to see the case some weeks later, and found that recontraction had occurred. Dr. Mattison turned the case over to me at this time for reoperation. I divided the perineal stricture, at the same time operating upon several penile contractions which in part explained the obstruction to the passage of sounds after the perineal operation. A 35 French was readily introduced into the bladder after thorough division of the contracted points. Subsequent introduction of the sound required considerable manipulation, but could be accomplished with a moderate degree of success. The final result seemed to be very satisfactory, and the patient resumed his business trips upon the road. At the end of about three months, during which time the sound was passed again at intervals, the patient reported to me with an attack of acute retention of urine. There seemed to be very little difficulty in the introduction of the sound, and it was impossible for the patient to voluntarily evacuate the bladder. This condition continued with occasional periods of improvement for several weeks, during which time the patient took a trip to West Baden Springs at the suggestion of some of his friends. He finally returned without any perceptible improvement. I suggested reopening the perineal wound; the operation was performed and the urethra enlarged to a caliber of 40 French. It was found that the penile urethra still retained its patency, and although at the previous operation it had been incised and dilated only up to a caliber of 35 French, as indicated by the register of the urethrotome, at the final operation it was found to admit 40 French without any difficulty. The patient is now, some six months after the last operation, doing nicely. There has been a slight recontraction recently on account of his omission to have a sound passed for nearly two months. A No. 35 French can be introduced into the bladder at the present time, and without doubt a 40 can be introduced within a few weeks.

Case 32: Deep Stricture, Retention and Extravasation.—A man, 30 years of age, mechanic by occupation. Successive attacks of gonorrhea had been experienced, the last occurring one year before consulting me, and the first at about the age of 18. Stricture of the deep urethra developed at about the age of 25. Numerous attacks of retention had occurred and had been relieved with increasing difficulty. Two days before I saw him retention had come on, and while straining violently to urinate he felt something give way in the perineum, after which he said he felt better for a time. On examination I was unable to get a guide into the bladder. The scrotum and perineum were brawny, discolored and infiltrated. Septic cellulitis was evidently impending. The temperature was 101.5 Fahr., and the pulse 120. The general condition was fairly good. Perineal section without a guide was at once performed and free incisions made into all swollen points. Several penile strictures of moderate caliber were left for future attention. Free drainage by iodoform gauze and perineo-vesical tube was provided for. The operation was well borne and the subsequent course of the case unexceptionable. There was some sloughing of the perineo-scrotal tissues, but the application of charcoal and iodoform poultices soon brought about a healthy condition. Three weeks later the penile urethra was restored to a caliber of 35 French. At the present time, two years after the operation, the patient easily passes a 31 French upon himself at long intervals.

(To be continued.)

Small, Troublesome Tumor in Throat.—At the last meeting of the Berlin Medical Society a tumor about the size of a pea was shown that had been removed with the tonsil on which it had been growing, mounted on a flexible stem. The patient had been unaware of its growth, but every little while she would choke, cough and exclaim that something had flown into her throat, as the tumor was drawn in with her breath.

SOCIETY PROCEEDINGS.

Chicago Academy of Medicine.

Regular meeting held at the Union League Club, Feb. 14, 1896.

DR. A. H. FERGUSON was chosen chairman.

DR. B. M. RICKETTS, of Cincinnati, read a paper (by invitation) entitled

A NEW OPERATION FOR RECTAL PROLAPSE AND HEMORRHOIDS.

The great frequency and unsatisfactory treatment of rectal prolapse and hemorrhoids had prompted him to devise means more simple and radical than had yet been employed. Hemorrhoids, both internal and external, together with the two combined, can alike be cured by a submucous ligature applied with a semicircular needle. The pile is first returned and full divulsion made. Only a portion of the varices are caught with the ligature which may be either silk, silk-worm gut, catgut, kangaroo tendon, or silver with the ends protruding at the point of entrance which should also be the point of exit. Any size or number may be ligated without much pain, no hemorrhage, sloughing, or infection. Prolapse in either of the three degrees may be entirely relieved by the same process, while there is a question as to the fourth degree. It may be necessary to make the operation in two or possibly three sittings.

DISCUSSION.

DR. WM. CUTHBERTSON—I have listened with a great deal of interest to the paper read by Dr. Ricketts. Those of us who have had experience in surgery know that hemorrhoids are of common occurrence, and the method which Dr. Ricketts has devised of obliterating the varices is an ingenious one. But I fail to see where the operation can be applied to all cases. I further fail to see how it is an advantage over the common method of applying the ligature. Dr. Ricketts says he objects to the use of the ligature in the treatment of hemorrhoids because it causes too much pain. My experience with the ligature has been that where the mucous membrane has been entirely cut around the hemorrhoid and the ligature applied in the groove made by the incision, there is little or no pain connected with it. He further objects to the ligature on account of the length of time which it takes for the pile to slough off. Where the pile is amputated within a reasonable distance of the ligature, it does not require any longer time for the pile to slough off and heal than it would with Dr. Ricketts' plan. Furthermore, Dr. Ricketts says that his method causes little or no sloughing. Where the plan is used indiscriminately in all classes of hemorrhoids, I should think the cutting off of the circulation in the varices would be as liable to cause sloughing and consequently to cause stricture eventually as by the use of the ligature. I do not think the ligature is applicable to all cases of hemorrhoids; nor do I think the clamp and cautery are applicable to all cases. My plan has been, where the hemorrhoids have been extensive, to use the ligature, particularly where the hemorrhoids have surrounded the bowel. In the smaller hemorrhoids I would advocate the use of clamp and cautery.

Dr. Ricketts condemns the method of injection of hemorrhoids as unscientific and unsurgical. Probably it is. Nevertheless I have injected a large number of cases of hemorrhoids with a mixture of carbolic acid and glycerin, and I have not had any greater proportion of sloughing by the use of these injections than I have by the use of any other means in curing hemorrhoids. I certainly have obliterated varices. Of course, I do not resort to these injections in large hemorrhoids. But in the small, painful, internal hemorrhoids I have used injections of carbolic acid and glycerin with gratifying success. While this method of treating hemorrhoids is discarded by Kelsey and many other rectal surgeons, yet I think there is virtue in it.

DR. H. K. ADAMSON, of Maysville, Ky.—I have listened with pleasure to the remarks of Dr. Ricketts on a new operation for hemorrhoids, although I do not see any special advantage in it over the use of the ligature in the treatment of them. I shall be glad to see the results from time to time of Dr. Ricketts' work, and when he gets his instruments completed I shall use them. In regard to the remarks of the gentleman who preceded me, and who believes in the injection treatment of hemorrhoids, I think if the doctor keeps up this treatment he will have more or less trouble. There is danger of the formation of abscesses by resorting to the injection of hemorrhoids with carbolic acid and glycerin. The danger attending it is too great when we can accomplish the same results more easily with other methods.

DR. E. H. DORLAND—I am exceedingly pleased to be here to-night to meet Dr. Ricketts and to have heard his paper. I have read of the submucous ligation of hemorrhoids, but I have not tried it. I can corroborate the statements made by Dr. Cuthbertson in reference to the injection of hemorrhoidal tumors by a suitable styptic. I have used 10, 20, and even 50 per cent. solutions of pure melted crystals of carbolic acid with the finest salad oil, which is better perhaps than ordinary olive oil, and I have had very satisfactory results. But for several years I have used a prescription that Dr. Foster (as I remember the name) from Texas sent me. He wrote me making some inquiries in reference to a series of articles I published a little while ago in a Philadelphia paper. He gave me a prescription for a styptic, and I like it very much better than carbolic acid, and I undertake to say that I can furnish 500 cases that have been treated from one to ten years that have remained permanently cured of hemorrhoids that were treated solely by the injection method. I am surprised to hear Dr. Ricketts say that he had never used the injection method and condemns it on general principles as "unscientific and unsurgical." Dr. Andrews has done the same thing, but he does not pretend to have treated any cases by this method. He also says it is unscientific and will not treat a case by injection. He looks upon it as a dangerous thing. The opponents of the injection method say that abscesses are formed by it, but if the pile tumor is properly injected with a solution composed of 3 grains to the drachm of salicylic acid, 3 grains to the drachm of boracic acid, and 3 grains to the drachm of carbolic acid, and those three heated together into a pure solution of glycerin, and you inject all the way from 5 to 60 drops into the hemorrhoidal tumor; if it has been "scientifically" done, it will not make a slough, and it will obliterate the tumor. I can demonstrate that in five or six cases which are at the Lakeside hospital now. I do not use the injection method where I have an opportunity to treat the case and can keep the patient two or three weeks in bed. I do not use the ligature in the manner of which the doctor speaks; I do not put the ligature around the hemorrhoid at all. I do not use the clamp and cautery, but I dilate the sphincter muscle and cut the pile tumor off. I have yet to see a fatal case from hemorrhage treated in this way. This is to be done under favorable circumstances, and about one-sixth of the pile tumor cut off with a pair of scissors will obliterate the pile. You do not need to go away down into it. By putting in a silk plug filled with absorbent cotton inside of the sphincters, with a cord or double thread attached to it, pulling one thread out upon the perineal side and the other above, and into the bifurcation of these cords pack a few pieces of sterilized gauze across the rectum, place a small roll of gauze and tie the two cords together over this roll of gauze, and it will control any hemorrhage within the pile-bearing part of the rectum. Of course, if you should go deep enough to cut one of the larger vessels it may become necessary to take it up at the time of the operation, otherwise it does not need to be done and the hemorrhage will not be serious. I have not been required to redress a case but twice in three years from hemorrhage, and I have operated on a large number of cases. The difficulty attending the more complicated operations is that they are not practical for the general practitioner with ordinary facilities to treat hemorrhoids. The injection of pile tumors with a styptic, injecting one pile at a time and allowing the man to go about his daily business and curing everyone of the pile tumors; is an established fact, and that beats any surgical operation that has been devised, because patients will be treated in this way if you do not detain them from their business. This is the very best thing that can be done in my estimation. A great many practitioners make the unfortunate statement that they have never tried the injection method because it is unscientific. Isn't anything in the practice of medicine scientific that will cure a case easily? We do not have to say in our school of medicine that we use the ten-millionth of a drop of something to cure a certain case, but we give a ten-millionth or even a teaspoonful, if we think it is necessary. Either one is scientific. I deprecate the use of the word unscientific in the treatment of pile tumors by the injection method.

The clamp and cautery to my mind is as barbarous an operation as one can make on a human being. A man ought to be prosecuted for using the clamp and cautery to cure piles; it is a perfect terror in this day, considering that the method of injecting these tumors with a styptic is far superior to the use of the clamp and cautery. With Dr. Cuthbertson, I fail to see wherein a ligature put around under the mucous lining, drawn tight and tied, will cause much less pain than when put on the outside of the mucous membrane and tied tight. The nerves are not all involved in the mucous membrane of the rectum. It occurs to me that this method, which has been outlined by Dr. Ricketts, is intended to be so difficult that but few of us can use it.

I am very much interested in the male and female needles of which the doctor speaks, and I want to see how they are going

to work in connection with operations for the removal of hemorrhoids. I have never seen an external pile tumor in my life but what could be the easiest treated, for the patient and surgeon, to take a sharp instrument, cut it right open, and let the clot out. There is nothing more to do with it. Slit an external hemorrhoidal tumor down, dress the case, and let the patient go, whether the tumor is as large as a hazel nut or a small hen's egg. It occurs to me it is unscientific to ligate an external pile tumor, equally so to inject it. The gentleman from Kentucky speaks of abscesses being formed. In not a single instance have I had an abscess formed where the pile tumor only has been injected with the styptic. If you keep the needle well into the pile tumor from the base and carry it up to and not out of the apex, draw it back and inject clear down to the point of exit, as you withdraw the needle, you will seal up the pile tumor and not a single drop of blood will escape, and you will never have the formation of an abscess.

Dr. W. A. Palmer, of Evanston—I must protest against the censure of the last speaker upon the clamp and cautery method. My experience has not been as extensive perhaps as some others, but the cases in which I have used this method have been attended with brilliant results. I fail to see how it is more painful for an internal pile, as the patient must have an anesthetic during the operation. After the operation has been performed and the rectum properly packed, the patient given small doses of morphin or opium powder, he can be made quite comfortable. This method has worked beautifully in two cases. With regard to prolapse, I have had no experience whatever.

Dr. A. H. Ferguson—I am very pleased to have been present to hear the remarks of Dr. Ricketts in the presentation of his new operation for the cure of hemorrhoids. The production of any operation for pathologic conditions, in order to be ideal, it must remove those conditions with the greatest safety to the local tissues and to the patient, that is, to secure union by first intention without sepsis. The remark has been made that asepticity in the rectum can not be positively secured, and that it should not be attempted. I must say, that we can in a number of operations in the rectum secure union by first intention. By taking all antiseptic precautions we can prevent the local septic infection in the majority of cases. It is true that asepticity is only a comparative thing on the skin in any part of the body; the resistant power of the tissues overcomes a minimum amount of sepsis in the rectal tissues, and we frequently get union by first intention.

The ideal operation to me for the cure of hemorrhoids is to amputate the hemorrhoid as you would a diseased finger, to tie the vessels by themselves and to sew the mucous membrane over it, and then put the sphincters at rest, with a rectal tube well protected with iodoform gauze. In at least 75 per cent. of the cases treated in this way I have secured union by first intention. In doing this we should use such material as will be absorbed, and that is aseptic catgut. I regard it as the ideal material of all buried sutures. The pathologic conditions in hemorrhoids are varied, and I do not believe we can lay down any single operation that will meet them. For instance, we have an external pile and an internal one. The treatment that is suitable for an external pile is not always suitable for an internal one. The treatment that is suitable for the strawberry or capillary internal hemorrhoid is not suitable for a hemorrhoid in which arterial supply predominates, or a hemorrhoid that may predominate with venous dilatation. When there is a simple hyperemia or slight dilatation with very little or no pathologic condition in the region of the rectum, many cures can be effected by dilatation alone. The method brought brought forward by Teale years of dilatation of the rectum and emptying the vessels, putting the sphincter at rest so that the circulation returns, when there is no pathologic condition within the dilated piles, has been the means of effecting cures in a number of cases. That treatment might have been supplemented with massage, and patients need be detained but a short time from their work. In certain cases the injection treatment is admirable, particularly in that form of pile which is principally composed of capillaries, where the method can be used safely and successfully. But the form of pile which has large arteries running through it is not so suitable for the injection treatment; nor is it suitable in those cases where the veins are considerably dilated, having large cavities or lacunæ on the inside, from which the injection material may be absorbed and cause grave constitutional effects. It is in cases of hemorrhoids with extensive pathologic conditions that the injection treatment does the least amount of good. But, as Dr. Dorland has said, it depends a great deal upon the operator, the amount injected, where it is injected in order to avoid large vessels, and if the surgeon can surround the pile tumors so as to constrict them with cicatricial tissue following the injection, then good and well. But to indiscriminately recommend the injection treatment for all cases of hemorrhoids is not good practice. It has its place, however. The ligation treatment has its place, too. Ligation is very suitable where there is a large artery passing through the pile tissues. I very frequently apply a clamp and cut the pile off, if it is a large one, and if there is a large vessel or vessels coursing through it, I then make a flap of mucous membrane on each side of the clamp, tie the vessels, sew the mucous membrane over it, or else apply a ligature in the usual way. There is the same objection to the application of the silk ligature that there is to the subcutaneous ligature, namely, local infection and secondary hemorrhage which come on after pathologic changes have taken place throngh the introduction of septic material. The hemorrhage comes on from the sixth to the twelfth day. How does it come on? It comes on by local infection, causing ulceration, the ulceration extending to the white embolism inside of the vein and breaking down that which nature throws out in the vein to close it up, and hemorrhage occurs. The same objections apply more forcibly to the subcutaneous ligature than to the open ligature. When we can go to work and treat with clamp and cautery hemorroids of almost every character and get first-class results, then I should say that this method has its place in surgery. It has its peculiar advantages in that it wards off sepsis from the tissues at once, that is, it forms an eschar immediately which is not capable of absorbing for a few days, and by that time nature will have thrown out a wall of granulation tissue, and this granulation tissue is the best fighter nature has against germs. I should say, therefore, that the clamp and cautery are applicable to all cases where the hemorrhoid is mostly composed of veins or capillaries. I do not believe in Whitehead's operation. I would simply say that the evil results which have followed Whitehead's and Pratt's operations have been clearly pointed out by Dr. Andrews of this city and others, and are procedures which may be characterized as very unsurgical, in that they are apt to cause strictures and other subsequent conditions which I need not mention here. I would only do Whitehead's operation in connection with epithelioma of the rectum, where, at the same time, we have hemorrhoids to deal with. Then we have to remove both the pile and cancerous area. I have resorted to Whitehead's operation in such cases with excellent results as compared with other operations for cancer in this locality.

With reference to the crushing operation I am not in favor of it.

Coming now to Dr. Ricketts' subcutaneous ligature for the treatment of hemorrhoids. The history of subcutaneous ligatures in the other parts of the body, in varicose veins of the legs, and in varicocele before the days of asepsis was not very good. After local puncture, which was often through the veins, very frequently asepsis was carried at once to the tunica intima of such veins, finding ready access to the constitution, causing septic phlebitis and death. We find the same history in connection with varicocele that not unfrequently death took place in a similar manner. We may carry subcutaneous ligatures around the veins in the extremities and scrotum and antiseptically seal these punctures up again, but we have better methods now. In inserting a subcutaneous or submucous ligature, what does it do? It passes in, it is true. You do not know but what it is passing through the middle of an enlarged vein; you do not know but that you are tearing through an artery. You bring it out and tie it. What does that do? It constricts the part within the ligature, but it leaves a small hole through which sepsis is bound to take place in the rectal region and the hole is not large enough for efficient drainage. It does more—it shuts off the nutrition to the mucous membrane on its surface. What does that do? It causes gangrene, or sloughing, followed by ulceration, cicatrization and contraction. The silk ligature has to come away by a process of ulceration and, you can not have the latter condition in this locality without local pus formation. You have all the dangers of both local and constitutional infection, one being immediate and the other remote. Following the sloughing there is the danger of stricture.

With regard to prolapse and its treatment by the subcutaneous ligatures there are many objections. I should try to keep it back with the use of astringents, careful regulation of the diet and supportive treatment, restoring the function of the levator and sphincter ani muscles. These muscles are very much relaxed in rectal prolapse. This treatment failing, a good old method is to cauterize the mucous membrane in longitudinal strips about half an inch or three-quarters of an inch apart, and then replace the bowel. By doing this we cause inflammation and plastic material is thrown out. The cauterization wards off infection until we get sufficient contraction of the redundant mucous membrance, and we do not run the risk of

infection. The operation is not followed with the same degree of shock that attends any of the cutting operations. That failing, excision has been done with success. But I would not favor it except in tissues that are already sloughing and where we have to resort to it on account of ulceration and sloughing. A treatment of prolapse of the rectum, as brought forward and practiced by Bryant, is to give the rectum complete rest, to perform colostomy, to treat the rectum locally until it is in a proper condition to peform its function again, and then closing the opening in the colon. I see no reason why, in the fourth degree of prolapse where we get invagination, we can not treat it successfully by laparotomy. This may be done with greater safety than operating from below. The upper part of the rectum and the sigmoid should be fastened to the abdominal wall.

DR. CARL BECK—I regret that I did not hear the paper of Dr. Ricketts. Not having heard it, I am at a loss to know what to say in the way of discussion. But with reference to the remarks of Dr. Ferguson as to prolapse of the rectum, I would like to mention a case of very extensive prolapse. The woman has been treated for prolapse by three different (eminent) surgeons in Europe, and each time by a different method. One operator stitched up the prolapsed portion of the rectum into the retrorectal excavation, excision of the lower portion of the rectum was performed by a surgeon from St. Petersburg, whose name I can not recall, and the third operator did a laparotomy. The last operation was performed about a year ago. The prolapse has recurred after every operation. The patient has been under my observation for nearly six months, and the prolapse is now at least eight inches from the orifice. When she stands up it is impossible to retain it by any apparatus. It is a constant source of pain, etc. I shall in a short time try another laparotomy, and I have devised a plan to stitch the flexure all along the abdominal wall as far as it is movable. From the letter I received from the last operator I judge that he only put in three or four sutures in his operation, and that these sutures had given way. As I understand, he has sutured the lax parts of the intestine to the lax parts of the abdominal wall, and the sutures have formed long bands, then giving away and prolapse recurring. Cases of such extensive prolapse as this are extremely rare. In such cases nothing will do good except to firmly unite parts of the muscles or abdominal fasciæ with sutures that go deep down. These sutures should be silk that will not be absorbed, and not catgut.

DR. RICKETTS (closing the discussion)—I am under obligations to you for the manner in which you have considered my paper. It pleases me very much, but I can assure you that I have never before fallen into the hands of such Philistines. I did not come to Chicago to try to teach you anything. That was not my object, but to tell you what I have been doing. I do not believe the members of the Academy have understood what becomes of the ligatures. The ends of them are allowed to remain exposed, in that way we secure drainage. I do not propose to bury any ligature in this operation, as I think that would be unscientific. I have never resorted to the injection method in the treatment of hemorrhoids, because I have seen and known of several bad results. Quite a number of malpractice suits have been instituted as a result of the injection method. As to the classification of hemorrhoids, I am frank to say that no operation should be resorted to, to the exclusion of others. No one will deny that there are dangers in connection with the injection method, and shall we subject our patients to those dangers? I understand that a surgeon of this city lost a patient a little over a year ago after using the clamp and cautery from hemorrhage, the hemorrhage occurring on the tenth day, and at the end of the twentieth it was fatal, so that we can not deny the fact that the clamp and cautery have their dangers. As to the loss of time in making the operation which I have suggested, if it is done on Saturday afternoon the patient is able to attend to his business on Monday, and so the loss of time is practically *nil*.

As to infection, it has not taken place in any of the cases I have operated upon, nor have I heard of its having occurred in cases operated on by others, for the simple reason that the ligature is allowed to remain exposed and to come away *ad libitum*, or to be taken away at the end of ten days after it has served its purpose. It is not necessary to make the ligatures very tight, but the constriction should be sufficient, however, to obliterate the vessels.

As to the injection of external piles, it is in such cases that we usually have abscess, and they are the most dangerous. I have been told that the cases that caused Dr. Brinkerhoff the most trouble were the cases in which the piles were external.

As to the use of the cautery, there are cases now and then where we can use it. There are also cases now and then where we can use the injection method; but where we have so many remedies for a disease we must rest assured that none of them are satisfactory. So it is with operations. There are many ways of treating hemorrhoids. We are trying to find the best method of dealing with them.

As to the 25 per cent. of failures which Dr. Ferguson speaks of, or rather 75 per cent. of successes in which he says union by first intention is secured, I would say that 25 per cent. is sufficiently large to put us on our guard. It is in these cases that the risk of infection is very great.

As to secondary hemorrhages, I have had none in my experience. There might be danger of such hemorrhage. I am aware that we might puncture an artery or divide it; we catch up part of it and leave the other part out. If we are going to have hemorrhage it is most liable to occur at the time of the operation. In the case reported by Dr. Beck the methods that were resorted to have been unsatisfactory, and it seems to me we must do something more than we have been doing.

There is one matter that has been entirely overlooked, namely, the position of the sigmoid in quadrupeds. It lies parallel to the spine. There are no adhesions; it is perfectly free. When we get up upon our hind parts or stand erect, we find the sigmoid falls down and the intestines above the sigmoid vessels run around it, while in the rectum they run perpendicularly with it. If you examine a case in the dead room you will find the sigmoid falls forward and becomes adherent to the anterior parietes. I have not heard this condition spoken of before. I have found it myself, and I find that anatomists who have given the subject any thought tell me the same. We find from investigation that bipeds are the only animals that have hemorrhoids. Monkeys have hemorrhoids, and, of course, human beings have them, but we do not find them in quadrupeds. The sigmoid of animals is not corrugated like the sigmoid of a human being—a thing that changes the aspect of the pathology and the anatomic relations very materially. As to what we shall do in cases of prolapse, we are as yet undecided, and in the case Dr. Beck speaks of in which three different operations were performed by eminent surgeons, are we not convinced that something more should be done than has been done for these cases? What is it? We can not very well cut down and take out a section of the sigmoid; but if there is any part of the alimentary tract where we ought to be able to do this it is from the sigmoid, because the stenosis is not as great. The lumen should be greater, allowing plenty of room for fecal matter to pass down. I would therefore suggest, as pointed out by Kraske, that we anchor it above or go above and make an abdominal section. So far as I have been able to determine I have not found a patient who has been relieved of prolapse in the fourth degree. I speak of this and throw out the suggestion that we may be able in the future to remedy this defect by the injection of any of the solutions that will enable us to get up adhesions and anchor the part there. Dr. Beck's suggestion might possibly be carried out and this trouble relieved, but I think it would be impracticable for him to suture the descending colon to the abdominal wall. It would have to be done to such a great degree, and if pulled upon itself, now, what will it do if we have the whole cecum with its contents behind it pulling down? Does the remedy for relief lie in the excision of a portion of the sigmoid, say of five or six inches, or as much as necessary, or does it lie in the injection of solutions for the purpose of getting up adhesions?

With reference to the operation that has been suggested of using the cautery in the prolapsed rectum, that it will answer the purpose in the first and perhaps second degrees I have my doubts. If we are to sear the rectum perpendicularly with the cautery and rely upon it as a remedy, it seems to me very unsatisfactory. I understand that Kelsey (I got my information from a student) in cases of prolapse takes the round ball of the Paquelin cautery, red hot, introduces it into the rectum and draws it backward and forward two or three times. I can not conceive of anything more cruel and not in keeping with the principles of surgery than to use a red hot iron in the rectum, expecting stenosis to result from it.

In closing, I would suggest that in the future you go to the dead room and study the condition as we find it in the human being. If you take the dog or the sheep you will not find hemorrhoids, but in monkeys you will find this pathologic condition.

DR. ROSA ENGELMANN read a paper entitled

ANTITOXIN IN ONE HUNDRED CASES OF DIPHTHERIA.

(See the JOURNAL, February 22, page 374.)

DISCUSSION.

DR. WM. L. BALLENGER—I have been especially interested in the facts and figures presented by Dr. Engelmann, one of the important points being the value of the early administration of antitoxin in cases of diphtheria. I read recently some statis-

ties which were very interesting to me, corresponding very well with those given by Dr. Englemann. Out of 4,445 cases under the old method of treatment, there was a death rate of 45 per cent.: 2,740 cases were treated with antitoxin, this number including laryngeal cases and other types of the disease, with a death rate 18.5 per cent. Of the cases in which antitoxin was administered on the first day there were no deaths. Its administration on the second day was followed by a death rate of nearly 3 per cent., on the third day 10 per cent., on the fourth 20 per cent., on the fifth 33⅓ per cent., on the sixth and later days, 41 per cent., showing a gradual increase in the rate of mortality with the lateness of the administration of the antitoxin. Its early administration is exceedingly important, and yet we should not refuse to administer antitoxin even in the later stages of diphtheria. I know of repeated instances in which it has acted with very prompt and gratifying results after four to six days development of the disease.

Dr. Palmer, who is present to-night, had a case of laryngeal stenosis due to diphtheria which I saw in consultation with him only a few days ago, The stenosis had existed for four days, the breathing being quite labored most of the time. Antitoxin was administered and inside of nine hours there was great relief and the child is now perfectly well. In the family there had been a number of cases of diphtheria preceding this one some three or four weeks. Bacteriologic cultures were made and verified in all the cases. The patients were all treated with autitoxin, making good recoveries. In this case there was also a bacteriologic examination made and the true bacillus found. Although we could not get at the membrane to touch it. A culture was made from a specimen secured low down in the throat and showed the existence of the Loeffler bacillus.

There are some points we should remember in treating these cases beside the administration of antitoxin, and which have a great influence upon the recovery of the patient. One of these is the surroundings of the patient. The patient should have plenty of sunlight. The germs grow in dark, damp places, but an abundance of sunlight and fresh air is unfavorable to their development. In one of the great children's hospitals in London during an epidemic of diphtheria, it was the custom to remove the diphtheritic cases to the non-diphtheritic wards two days after the membrane disappeared. In no instance was there an outbreak of the disease in these wards, although there were undoubtedly germs still in the throats of the convalescents. In the meantime an adjoining building was being torn down and such clouds of dust were entering the hospital that the management closed the windows and shutters to keep it out. A few days later a violent epidemic of diphtheria broke out in the wards which had heretofore been exempt. This circumstance indicates very clearly the advantages of fresh air and sunshine in controling the disease. I understand that Klebs has made some experiments with the toxin of the germ itself, making cultures in some fluid media, then filtering the germs from the fluid leaving the toxin as the remedial agent. This treatment is similar to Koch's tuberculin, and in fifty-one cases which he has treated the death rate was 13 per cent.

If we will remember that every germ manufactures an excrement made from its own environment and for a moment consider ourselves germs, the excretions of our bodies being the manufactured product, we can easily understand how life would be very short under such circumstances. The same thing may be said of germs and their toxins. I understand that Klebs is now using the toxins of the Loeffler bacillus in the treatment of diphtheria and while the serum treatment is probably the best at our command, it will be of great interest to know the results of his experiments. Medicine is upon the threshold of a new era. As the laws of physiologic chemistry, and of pathologic processes become better understood, treatment will be more in harmony with physiologic laws, and toxins and antitoxins will find a larger place as remedial agents.

Dr. Wm. Cuthbertson—After being strongly opposed to the use of antitoxin I have become a convert. In some cases of diphtheria which occurred in this city in my practice, when antitoxin was first introduced, my brother and I used it in several cases. Our results were bad. I am inclined now to attribute the bad results at that time to the imperfection of the antitoxin. My reason for being converted to the use of antitoxin was a case I had several months ago of diphtheria in which the membrane extended down to such an extent that there was laryngeal stenosis, and it seemed as if intubation or tracheotomy would have to be done. I made up my mind to try the antitoxin which had been lauded so highly. I therefore injected, on the fourth day, 600 units of the antitoxin, and still kept up local treatment and free stimulation. The laryngeal stenosis was stopped and the child began to breathe freely on the next day, and eventually recovered. I might say that a microscopic examination was made in this case and the Klebs-Loeffler bacillus found. The next case of diphtheria I had, which was several weeks afterward, and in which the bacillus was also found, showed signs of laryngeal stenosis at the very outset, and having had such good results in the other case from antitoxin, on the second day of the disease I injected 600 units of antitoxin. The laryngeal stenosis did not get worse, but gradually cleared up. The effect of the antitoxin in each of these cases was to produce almost total anuria. The kidneys were acting freely in both cases before I had injected the antitoxin, an immediately after the injection they stopped secreting, or for the first thirty-six hours after injection of the antitoxin there was not more than three or four ounces of urine passed. I made an examination of the urine in each case and found it loaded with albumin. After the application of hot poultices and diuretics the kidneys began to secrete and gradually kept on increasing until the normal amount of urine was voided. Had the cases been placed on a liquid diet from the start the amount of urine might have been normal throughout the disease. Ten days after the injection of the antitoxin an urticarial rash appeared, and the temperature in each case rose to 100.

Dr. Engelmann has referred to the part which the staphylococcus might play in this connection. We know that when the staphylococcus comes in contact with a surgical wound gangrene is set up, a slough is formed and gradually thrown off. In a case in which the staphylococcus comes in contact with a lesion of the mucous membrane, either in the larynx or pharynx, I see no reason why it should not act in the same manner in a case of throat trouble as it would in a surgical wound.

Dr. Engelmann made further reference to the apparent interchangeability of these germs. Those of us who can look back to the time before the Klebs-Loeffler bacillus was discovered can recall to mind cases of scarlet fever where there had been angina associated with it. The disease would be well marked in one case, and in other members of the family who had been exposed to the contagion we would find trouble set up presenting the clinical picture of true diphtheria. I have seen the same happen in cases of measles where there has been sore throat connected with the measles, and in the other members of the family disease would be set up which would present a true clinical picture of diphtheria.

Dr. Palmer—I would ask Dr. Engelmann about the febrile reaction.

Dr. Engelmann—In some cases I have gotten it, in others I have not. It is the rule to have a rise of temperature after the administration of antitoxin.

Dr. Moyer—Have you observed cardiac paralysis following the use of antitoxin?

Dr. Engelmann—I have seen cardiac paralysis twenty-four hours after the use of antitoxin in two cases, and whether it was due to the antitoxin or toxemia is a question; and faucial paralysis in one case.

Dr. Patrick—How long after its administration?

Dr. Engelmann—About eight or ten days.

Dr. Engelmann (closing the discussion)—I would like to speak of the manner in which the membrane sloughs after the use of antitoxin. An absolute necrosis takes place, and if you watch the throat you will see the edges of the membrane curl up, and within twenty-four hours it is extruded *in toto*.

Another question that arises is, Shall all children exposed to diphtheria be immunized? I find there is great objection among practitioners to immunize children not exposed. When it comes to the question of adult immunization I think we can leave it, because adults are not so prone to infection, unless they are in the midst of it all the time, as children are.

Dr. Ballenger has referred to hygienic measures. There is no question but that we should use antiseptics, tonic and stimulant treatment in connection with the use of antitoxn. Baginsky, of Berlin, makes a good argument in that he says we must effect a reduction of the toxin *in loco*, because it is the toxin that is doing the bad work. Therefore, if we reduce the production of toxin we will have to use less antitoxin.

As to the subject of toxin injections, it seems to me that the use of antitoxin is a more reasonable procedure, because in a normal case of diphtheria the blood of the patient itself is trying to manufacture antitoxin. Heretofore, when a patient got well, the antitoxin produced enough vitality to offset the toxin that was formed. Why should we put extra work upon cellular organism by introducing toxins when we can lessen the labor of the organism by using antioxin?

Dr. Cuthbertson is not the only convert to the use of antitoxin. I find that the greatest number of objectors are those who have never used it and will not use it. Practitioners seem to object to the use of antitoxin upon general principles.

Dr. Cuthbertson reports a case of beginning laryngeal stenosis in which he used 600 units of antitoxin. My experience has taught me that small doses do not always prevent the use of intubation or tracheotomy, and in my later experience I learned to use antitoxin in more heroic doses, thus averting tracheotomies and intubations. Another point I wish to make is this, that the practitioner should not wait for stenosis to manifest itself before using antitoxin. I would ask Dr. Cuthbertson whether he found albumin before or after the administration of antitoxin?

DR. CUTHBERTSON—Immediately after its injection.

DR. ENGELMANN—The only way to reach a conclusion in reference to this matter is to examine the urine both before and after the administration of antitoxin. In twenty-one cases recently immunized an examination of the urine was made before and afterward, and no albumin was found to be present.

As to the interchangeability of the bacilli, I meant the interchangeability of the pseudo-bacillus with the Klebs-Löffler bacillus.

DR. REILLY—Don't you mean by interchangeability that the germs change from virulency to benignancy, or *vice versa*?

DR. ENGELMANN—Yes, I tried to convey that idea. It is supposed that the pseudo-bacillus is an attenuated form of germ.

As to the question of rashes, when I began to get out statistics I did not take the opus of each bottle of antitoxin I used. But now I take the opus, the date of manufacture, in order later to possibly trace it to the opus. I think New York men have done some of that work, but I do not know that it has been considered conclusive.

As to administering antitoxin in the late stages of diphtheria, I should not hesitate to use it, although we can not expect so much from it. Still I have seen it used in the late stages when it has done good.

DR. PATRICK—Have you noticed any unpleasant effects from the immunizing dose only?

DR. ENGELMANN—Yes, in some cases. I have seen the development of a rash due doubtless to the immunizing dose. For instance, a brother and sister received a dose of antitoxin from the same bottle. The brother developed a mild urticaria; the sister an erythematous rash of one extremity, attended with swelling of the knee and a great deal of arthritis. Why in one case the rash was mild, and in the other it produced such a profound impression, I do not know.

DR. PATRICK—Have you noticed any cases of cardiac failure?

DR. ENGELMANN—One case which occurred since writing my paper, in which I noticed a lighting up of a previous chronic heart trouble, or at least an exaggeration of it. It is the only case I know of.

DR. PATRICK—What was the previous heart condition?

DR. ENGELMANN—The girl had mitral stenosis, and after the injection of one part of the No. 3 for the diphtheria, she having refused to be immunized, she developed urticaria, muscular pains and a little arthralgia, and about three weeks after the injection of antitoxin complained of heart trouble.

SELECTIONS.

Influence of Lecithin on the Growth of Organisms.—Experiments with dogs and other animals show that subcutaneous injections of lecithin increase notably the number of red corpuscles in the blood. They rise to 800,000 or a million and more above the normal, and the hemoglobin is also increased. This improved condition of the blood comes immediately and lasts a long while. The scientists who have made a special study of this subject are Danilewsky, Selenski and Sostin, and their report to the Académie des Sciences is full of interest. Experiments on the egg and larvæ of frogs showed that it produced an extraordinary growth in the tadpoles, and these tadpoles showed much less pigment than the others. Lecithin does not act like a food. It is not an organo-plastic substance. It increases the assimilation of the food, and has a direct stimulating influence of great importance on the processes of multiplication among the cellular elements. The improvement of the blood, we know, is the most important condition to stimulate the growth of the organism, that is, the multiplication of its morphologic elements and their development. And this, lecithin accomplished in these experiments.—*Semaine Médicale*, January 8.

Amygdophenin, the new Remedy for Rheumatism.—The effect of this new remedy in acute articular rheumatism has been carefully studied by Stüve (*Centralblatt für klin. Med.*, Nov. 16, 1895), who also observed incidentally its effect on fevers and neuralgia. Amygodophenin (ethylamygdophenin) is a derivative of paramidophenol, in which, in the amid group, an atom of hydrogen has been replaced by the amygdalic acid group, and the atom H of the hydroxyl group, by the carbonate of ethyl. It is a light whitish gray, crystalline powder, hard to dissolve in water. After administering it, a derivative of paramidophenol is found in the urine, the reaction of the indophenol. Stüve administered it in twenty cases of articular rheumatism, eleven of which were attended with fever. In seven cases in this group a notable improvement manifested itself in two days after commencing its use. The local symptoms and fever had disappeared entirely by the end of four to six days. With the exception of one patient, who brought on a relapse by leaving his bed too soon, the cure was permanent in all. One patient had been annoyed by the buzzing in his ears caused by salicylate of soda in former attacks, but when amygdophenin was given him, there were no attendant annoyances, but recovery in less time than ever had been caused by the salicylate of soda. In the other four cases in this group the result of the use of amygdophenin was not the same in all. The effect was not very successful in two cases, one with cardiac trouble, and extremely tardy recovery in another. On the other hand, fine results were obtained in one case where there was serious aortic insufficiency; marked improvement followed the administration of 3 grams of amygdophenin, which cured completely an intercurrent and slightly febrile attack of acute articular rheumatism. The only absolute failure in the use of amygdophenin was in a case of pain in the joint of one knee. But this was probably a blennorrhagic rheumatic trouble, in which all the other antirheumatics have less efficacy. In the four cases of febrile articular rheumatism the amygdophenin produced a complete and rapid cure, with one exception. This was a case of simple pain in the joints without objective phenomena of any kind. In one case the amygdophenin was replaced for a few days by salicylate of soda, which did not have the slightest effect, and not until the amygdophenin was restored did recovery continue to a permanent cure. As an antipyretic it was tried on some phthisic patients with fever. One-half gram had no effect upon the temperature. One gram lowered the temperature 2 degrees C. in one case with profuse perspiration, but in others the same dose only lowered the temperature one-half to one degree C. and not at all in others. It is therefore impossible to count upon amygdophenin as an antipyretic at this dose. In neuralgia it produced good results in several cases, but of course its effect is only palliative. However, it was noted that it acted favorably even in cases where the pain had a central origin, as in tabes, sclerosis, etc. It was administered in one gram doses from one to six times a day, at first in powders and later in compressed tablets. One gram doses never produced any attendant annoyances of any kind in the series of observations noted, amounting to about one thousand in all. In one, the patient after taking 5 grams in twenty-four hours, complained of a slight vertigo; another who had taken 6 grams noticed a buzzing in his ears, but both of these vanished at once when the amount administered daily was reduced. No exanthema was observed in any case, nor dyspeptic troubles, nor renal inflammation. Three cases only had sweats. Stüve sums up the result of all his observations in the announcement that in amygdophenin we have a most valuable remedy for rheumatism, reliable and entirely innocuous. It acts in cases where the other antirheumatics, such as salicylate of soda, produce no effect, or must be discontinued on account of attendant disturbances. As to its use in pyrexia and neuralgia Stüve does not consider the limited number of observations on record as sufficient data upon which to found an official opinion.—*Ther. Woch.*, 1895, No. 47.

Infective Inflammation of the Parotid Glands. The *Journal de Méd. de Paris* of Jan. 19, 1896, contains a study of three cases of this kind interesting on account of their etiology and treatment, by Regnier, surgeon at the Lariboisère. He says that until recently we have always considered these parotid inflammations as caused by some secondary inflammation of the lymphatic glands. We are now becoming aware of the fact that it is the glandular pockets of the gland itself that are involved, resulting from a primary inflammation of the excretory canal. The infection starts in the mouth and passes up through the excretory canal to the pockets of the gland.

Chassaignac first called attention to this variety, which he called canalicular, characterized by swelling of the parotid region followed by pus discharging through the duct of Steno. Virchow and Weber also observed cases where the pus and the lesions were in the excretory canals and the alveoli. But Croq as early as 1873 tried to prove that every case of parotid inflammation with a general cause is preceded by some inflammation in the mouth, which extends into the gland through the duct of Steno. The recent histologic and bacteriologic researches of Claisse and Dupré confirm this view. In a large number of cases they were able to trace directly the upward extension of the infection from the mouth up into the gland. It is in this way we know that infection finds its way into the liver, the kidneys, the bronchial tubes and the breasts, through the excretory ducts and it is the same with the parotid gland, probably. But this opinion must not be regarded as absolutely settled, although it has been verified in a large number of cases. Duplay, in his Treatise on Pathology, suggested that the infection might arrive by way of the lymphatic glands, and in that case it is not the parenchyma of the gland but the lymphatic ganglia that are affected. This location of the inflammation must be borne in mind as possible when diagnosing, but if it is of lymphatic origin an abscess will form, the opening of which will show an accumulation of pus. But if the inflammation is in the glandular pockets and is being infected through the excretory duct, the lancet only brings out a few tiny drops of pus, contained in the pockets of the gland, into which it penetrates, while the edema, the swelling, and the sensation of fluctuation, would have made you confident that there was a considerable accumulation of pus there.

It seems as if lancing it had done no good, but in reality it is followed by a fall of temperature and local improvement, and the issue of pus later through the duct of Steno explains the above phenomena, and proves that it is a glandular inflammation with the pus secreted in the acini or excretory canals.

My first case was a woman recovering from typhoid fever, who became very much swollen in the parotid region, with edema, and fluctuation accompanied by fever. Convinced that there was a large collection of pus, I opened straight into the parotid gland, and found to my surprise that scarcely anything issued from the incision, a few tiny drops of pus being distinguished with difficulty in the blood that followed. The temperature decreased however, and a couple of days later I saw pus exuding from the duct of Steno. The swelling diminished and a permanent cure ensued. Another case was a man of 45, large, alcoholic, suffering from multiple articular rheumatism and acne. The parotid region began to swell, there was edema and fluctuation and I opened the abscess as before, using a grooved director and passing through the whole gland, without finding any accumulation of pus. But the temperature fell afterwards, and a couple of days later pressure on the swelling discharged pus through the duct of Steno into the mouth.

A patient came to me suffering from a urinal abscess which I lanced. Convalescing from this he was attacked with erysipelas of the face, for the second time in his life. One injection of Marmorek's antistreptococcus serum was made, and the erysipelas passed away, as it might have done without the injection, perhaps.

An abscess next formed at the spot where the serum had been injected, which I opened and found full of streptococci. A few days later the parotid region began to swell, puffiness and fluctuation ensued and I opened the swelling, out of which poured a large quantity or pus, also full of streptococci. Evidently in this case I had lanced a ganglion abscess, infected through the lymphatic gland.

These three observations show that infection may reach the parotid glands, through the excretory canals or the lymphatic glands producing in one case what Chassaignac calls a canalicular parotid inflammation, or acinous adenitis, and in the other a simple adenitis. In the latter case a certain amount of pus will follow the knife, but in the former case you will not have the satisfaction of seeing the pus escape. But you need not fear that you have made a mistake in your diagnosis. The pus is scattered through the gland, contained in the acini and excretory canals. Lancing always brings relief, lowers the temperature and promots recovery.

Tablet Triturate Incompatibilities. Since our presentation of the pharmaco-therapeutic relations of the tablet triturates last year there has been in some quarters an awakening to the dangers that threaten medical practice through an extension of this form of medication.

Despite the fact that some manufacturers are exploiting the tablets "for all they are worth," they are being severely let alone by many physicians who were at first attracted by this "machine made," "cut and dried," "diease to fit the remedy" plan of "doctoring made easy. The firm that enjoys the dubious distinction of having first introduced the tablets to the medical profession has replied to our criticism in their "Notes," but instead of answering a single one of the arguments advocated against the tablets, have laboriously endeavored to misrepresent our positions relative to the numbering of tablets. This firm proudly boasts that one of our statements relative to the use of the tablets by physicians, viz.: "That they are popolarizing the form of self-medication; the tablets now being put up and numbered according to the disorder for which they are recommended," does not apply to its (the firm's) make, but that these observations are "based upon tablets which have gained prominence in the last few years." The statement was based upon the observation that non-medical persons select various combinations of remedies from titles by which these tablets are designated, as indicated by the particular disease for which they are recommended. Furnished with a catalogue containing description of remedies from "absorbent dyspeptic" to "vaginal astringent." it does not require much ingenuity on the part of any fairly intelligent member of the laity "to pick the winner," without paying the physician for making a selection for him.

In a recent catalogue issued by a certain firm there are about one thousand formulas, nearly one-half of which are designated by therapeutic titles. Most of these formulas show either a profound disregard for pharmacy, or a willful desire to mislead the medical profession. Some of these examples are of a character to bring the dispenser within the pale of the pharmacy law or an anti-adulteration act. A number of these formulas purport to contain highly volatile liquids, which to anyone the least familiar with pharmacy is shown on its face to be either a physical impossibility to combine in the form of a tablet, or after being combined or prepared, would from their very character rapidly volatilize and leave a more or less inert tablet.

Of this class are the tablets containing:

Ammonia, aromatic spirit of, in: Acetanilid 3 grs.; spirit of ammon. arom. 5 min.; soda mint, spirit ammon. arom. 2 grs.

Camphor combinations, in which the camphor sublimes on the sides of the containers: Anodyne; coryza Nos. 1, 2, 3; rhinitis; diarrhea.

Camphorated tincture of opium in the following: Astringent comp., 6 min., No. 2, 5 min.; croup, spasmodic, 5 min.; dys-

peptic (fermentative); camph., 10 min.; throat tablets, 10 min.

Heart stimulants, nitro-glycerin with tinctures of strophanthus, cactus grandif., belladonna, digitalis, etc.

Inflammatus, about 5 min. of tinctures, including Norwood's veratrum viride.

Sun cholera mixture, 3 min. each of tincts. opium, capsicum, rhubarb and spirits camphor and peppermint; 12 min. in one tablet. Will the *Sun* (N. Y.) recognize in this tablet its famous offspring?

It will be said that the medical constituents are present in such proportion as to represent these respective tinctures, spirits, etc.; this is the rankest kind of misrepresentation. But how about preserving nitro-glycerin in the tablet form, or tinct. valerian ammoniated?

The following are specimens of rank incompatibilities and "shotgun mixtures:"

Anti-asthmatic: Potass, iodid, pot. brom, ea. 2 grs. Fl. ext. euphorbia pil. 3 min.; tinct lobelia, 2 m. Nitro-glycerin, 1-200 gr.

Antiseptic dyspeptic: Pepsin, bismuth and salol.

Cholera infantum: Lactopeptin, calomel, bismuth subnit., salol, zinc sulphocarbolate.

Imagine the advantage of nitro-glycerin with iodids and bromids, or digestive ferments with antiseptic phenol derivatives in the presence of free hydrochloric and lactic acids!

Mercuric chlorid, the most sensitive alkaloidal reagent known is combined with alkaloids, alkaloidal drugs in the following: Belladonna comp., bismuth opium comp., bronchial No. 2 (merc. iod.); diffusive malarial, "diphtheria and grip;" kali comp.; mercurius comp.

In the following a weak compound of phenol, salol, is combined with hydrochloric acid, producing new compounds, liberating phenol which no doubt in many instances has produced the most serious systematic disturbances if not fatal consequences: Bismuth catechu comp.: Bismuth subnit., salol, ea. 2½ grs.; powd. opium, catechu, ea. ½ gr.; oil cinnamon ⅛ m., acid hcl. dil., ½ gr.

This is without doubt the worst specimen of a formula that has ever been perpetrated. Similar to these we find:

Hypophospites with creosote, iron albuminate and arsenic; iron mercury comp. with quinin and strychnin; and "sore throat:" Tr. ferric chlor., 5 min., mercuric chlorid, 1-64 gr. in each tablet.

Blaud's in which ferrous carbonate is decomposed; also combined with arsenic; chlorodyne with nitro-glycerin, but without any chloroform.

As will be observed from these few examples every well-known pharmaceutic and chemic principle is violated. The fundamental therapeutic principle is also violated. Tablets when not composed of substances to be dissolved before they are administered, as "hypodermic tablets," etc., should be combined with such drugs as will exercise their local effect through the viscid vehicle that results from the solution of sugar, gum, etc., of which the tablet is formed: resinous and disagreeable tasting remedies are therefore not adapted to this form of medication. In the face of this we have tablets intended to be dissolved in the mouth composed of copaiba, aloes, extracts of hellebore, gossypium, ferrous sulphate, Venice turpentine, etc. Are there any remedies so repulsive to the palate?

But as though this were not enough, there are also listed "blank tablets;" white, yellow and pink, presumably to afford physicians an opportunity to try the "color cure" of the celebrated Vienna Institute. This "color therapy" is a relic of the "tabula smaragdina" of Hermes Trismegistus and has never been outranked in the history of charlatanism.

So it will be observed that not content with violating every principle of pharmacy and therapy some tablet manufacturers have also adopted the methods of the "fakirs." How any intelligent physician can countenance or permit himself to be persuaded by these adventurers and mountebanks to use these tablets in his practice passes comprehension.—*Prof. C. S. N. Hallberg* in the *Graduate*.

A Foreign View of Our Mineral Waters.—The *Deutsche med. Wochenschrift*, of January 23, contains an interesting and comprehensive study of the mineral springs of this country, with an array of statistics culled from the earliest work on the subject, 1831, to the latest report of the U. S. Geological Survey, which announces 8,843 mineral springs, with 785 analyzed. The writer, Dr. Beissel, of Aix-la-Chapelle, does full justice to the abundanee and variety of these healing waters, but he says that only a few of them are regarded with confidence yet, as the country lacks physicians with the requisite knowledge and perseverance to exploit them. He also asserts that the American is not adapted to this kind of cure. He never will stay long enough at the place, and when he is there he lounges in an easy chair all the time. Those who understand how to derive the most benefit from a resort of this kind are not deterred by the trip across the Atlantic, and go to Europe for what they can not find yet at home. We have long known that our people are simply neglecting the great good that nature has so bountifully provided in our own mineral springs.

Fractures of the Clavicle.—The treatment of these fractures has recently entered upon a new era, that of surgical intervention and even wire sutures. Hassler writes to the *Lyon Médical*, Nov. 2 and 3, 1896, in regard to this, and offers the following suggestions:

First, he condemns absolute immobilization in an immovable apparatus, because it can not be done with any simple apparatus, because it leads to atrophy of the muscles to a greater or less extent, and also because it is not necessary to have absolute immovability in order to produce consolidation. We all know that there can not be a more difficult fracture to manage than a broken rib, and yet it grows together again very rapidly under a band of diachylon or a bandage around the body, notwithstanding the incessant movements of the thoracic region. He indorses and recommends early massage and relative immovability in an apparatus, in fractures from a direct cause, and in almost every case. In fractures of the outer or inner third there is the least displacement and attrition, and this method insures the most perfect cure. In fractures of the middle third, it is also the best method, for any phenomena resulting from compression of the blood vessels and nerves are absolutely exceptional. In fractures from a direct cause in the outer and inner third early massage is indicated. Fractures of the middle third require this even more surely. The latter are the only fractures which indicate suture of the bone.

An operation and early suture of the bone are called for: 1. When there are serious primitive accidents, compression, contusion, laceration, inflammation of the vessels and nerves. 2. To forestall multiple complications resulting from an exuberant and vicious callus, which often appears from a direct cause involving the middle third, and especially where there is necessity for a more or less speedy return to work. 3. Where the bones lap very much and there is reason to fear a shortening of the whole bone, which would interfere seriously with the strength and movements of the arm. 4. When a fragment has been pressed down and can not be raised, or will not stay raised. 5. When the periosteum has been so crushed and mangled that blood has settled in and around the broken parts in large quantities, or when by the absence of any sound of friction between the ends of the bone there is cause to fear the interposition of some fibrous or muscular tissue or growth. 6. When the fracture is complicated with an open sore, probably infective. Surgical operation is indicated in this case, as much to secure disinfection as to insure proper coaptation with the suture.

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SATURDAY, MARCH 7, 1896.

SCHOOLS AND ANTI-SCHOOLS.

The system of public schools is perhaps the one institution in which the American citizen takes especial pride. He considers it the corner-stone of the Republic, and for its preservation is prepared to make any sacrifice of blood and money. The traditional palladium has come to be invested with such a sacred character, that it is felt a sacrilege to criticise it; nevertheless, it is well for us to look at the conditions of to-day and inquire whether theoretic considerations as to universal education are really any longer practical possibilities.

When communities were small and luxurious establishments comparatively few, when wage-earners readily found employment and the children of the poor became prosperous men and women by insensible gradation, when reading, writing and arithmetic were the fundamentals of education and the methods of teaching were comprehensible by the mass of the young, there were plausible reasons for universal education; but the eve of the Twentieth Century finds enormous aggregates of human beings in which the refuse of dissimilar races, inheriting generations of degradation, bigotry and superstition, is in an immense proportion, and it is not possible to satisfactorily educate the offspring of such antecedents in the numerous branches which now form parts of the curricula of even low grade schools, especially by the complicated schemes of instruction elaborated by conventions of rival school teachers. Most of these children struggle through a term or two in a slip-shod fashion and then go out to labor in sweat-shops, factories, and the huge retail stores, with no other practical result than perhaps a greater knowledge of English than they could have acquired in their own wretched homes, where only the language of their parents is habitually spoken. As abject laborers and drudges, hewers of wood and drawers of water, they have in fact little need or desire for other knowledge than that of the language of the country and its minor currency, so that the perfunctory work of instructors in the detested school has been wasted in the attempt to teach them what they only imperfectly acquire and soon forget. The few who care to read apply their accomplishment to demoralizing literature that were better never read, and have no interest in this world or the next beyond what the priest or rabbi impresses upon them. For the half dozen in whom natural aptitude asserts itself, among the hundreds, the awakened intellect breeds contempt for the squalor and ignorance of their parents. The girls, moth-like, are attracted to the bright lights of the brothel and variety stage, where they find fine clothes, good food and more congenial associates than with their mothers and elder female kin, whose lives are daily toil and rough usage, the lot to which marriage in their own sphere surely dooms them. Even the children of the mechanic class, if ambitious, learn to spurn the vocations of their fathers, despise all manual occupation, and aspire to knowledge which unfits them for callings wherein they might find employment suited to their station.

How far the public school is responsible for the disappearance of the apprenticeship, through which boys grew to the mastery of the trades, can not be stated, but the older masters of every mechanical handiwork complain that their crafts are no longer recruited by well-trained and skillful young men. Proficients in Grecian history, algebra and physical geography do not care to learn how to handle a saw, mix paints or wipe a joint. Nor is over-education the only reprehensible tendency of modern schooling. Over-crowding with attendant faulty ventilation, bad light, constrained posture, protracted confinement and mental strain are doing their best to deteriorate the bodies of children, besides making their brains less able to digest and assimilate the over-seasoned food with which they are crammed. Dazzled by the beautiful mysteries of uranography and astronomy, puzzled by equations of two or more unknown quantities, and worried by intricate geometric theorems, they are left in blind ignorance of the beautiful structure and mysterious functions of their own bodies, or taught an expurgated infantile physiology, which, like the omitted Odes of Horace, stimulates a vicious prurient curiosity.

It is the legitimate office and imperative duty of the medical profession to indicate the remedy for a state of affairs that compromises the future of the people. If schools as organized and conducted hazard the health of the growing child and interfere with its nor-

mal development, they are objectionable; if they are to blame for the defective eyesight, crooked forms, nervous irregularities, and menstrual disturbances of girls, they had better give place to open air gymnasia and public play-grounds; if they tend to diminish the number of the artisan class, develop contempt for illiterate parents, aversion for their humble home and dissatisfaction with their station in life, and excite yearnings for meretricious finery and display, they are doing irreparable harm, and were better wholly supplanted by the monitory Sunday school and practical industrial school; if their results are only temporary, so that simple grammatical precepts make so little lasting impression that "You can't do no better," "I aint had no order not to go," and "Me and him was not in it," drop unconsciously from the lips of real-estate agents, clerks and others (the words are quoted as uttered) after their pupilage is over, the time thus wasted were better employed in the acquirement of some honest trade. It is only necessary to listen to the masses, ex-pupils of the public schools, to realize that the tuition they have received has been thrown away upon them. The veriest Chinese cooly, rapidly making the complex characters of his language in india ink, shames the labored, clumsy mis-spelled efforts of our corresponding lower classes. The province of the physician grows apace with the development of civilization. He may be powerless to compel individuals to do as they should and leave undone what they should not do, but he ought to direct the legislator, or himself fill the rôle of legislator, and indicate what is best for the several classes of the community.

The wretched home of the pauper alien child is, however, less potent an anti-school, operating to undo what the State seeks to accomplish, than the grog-shops with which chiefly alien rum-sellers dot the main avenues of our great cities. Where there is one school house in many blocks, all four corners of intersecting streets have their anti-schools, offering resorts and lounging places for young and old, alluring them by their glaring lights and boisterous crowds from their cheerless homes, which fretful, overworked and ailing women unconsciously make more repellant. Whether as public health officer or member of special excise boards, the physician's voice should be heard in condemnation of the corner dramshop, which the political press indirectly sustains as a source of revenue for the nominal support of public charities. Pictures of brilliant red linings of the stomach, by which the public school health primer seeks to affright the pupil, are forgotten with the taste of the first sweetened exhilarating draught, and so long as this is accessible on every thoroughfare, the results of the school house, rational and useful, or specious and futile, are of no avail. Hence the school question involves the anti-school, and the medical sanitarian will properly insist upon considering them together.

THE SPECIFIC NATURE OF THE ANTITOXIC SUBSTANCES IN THE BLOOD OF ANIMALS RENDERED IMMUNE AGAINST THE BACILLUS TYPHOSUS AND THE BACILLUS COLI COMMUNIS.

The question of the identity of the bacillus of typhoid fever and the bacillus coli communis has been discussed and studied by bacteriologists for quite a long time without reaching conclusions that have seemed perfectly satisfactory to all interested. These two microörganisms are so similar morphologically and culturally that one is often spoken of as a variation from the other, both being either identical or very closely related. It is true that the colon bacillus produces gas in glucose media, causes an acid reaction with caseation in blue litmus milk, and that its bouillon cultures give the indol reaction; whereas the typhoid bacillus does not give these reactions, but every now and then one meets with bacilli that, from the manner in which they respond to these differential tests, seem to form connecting links between the colon bacillus, which is a normal inhabitant of the intestinal canal, and the typhoid bacillus, which is found in the body in typhoid fever. The question consequently presents itself in this light: Is the typhoid bacillus merely a variety of the colon bacillus group, the result of certain peculiar conditions or environments, or is it a microörganism strictly *sui generis?*

One of the fundamental principles of acquired immunity is that the antitoxins are specific; that is to say, they protect only against the microörganism by which they are produced. The antitoxin of diphtheria operates only against diphtheria bacilli, the antitoxin of tetanus only against tetanus intoxication. Consequently bacteriologists generally have become interested in the problem as to the specific nature of the antitoxins of typhoid bacilli and of the bacilli coli communis. Experiments in this direction have been made by a few investigators, but the results have not been absolutely uniform and finally decisive. Very recently LÖFFLER and ABEL have made this question the subject of a long series of careful, painstaking experiments, and the protocols of these experiments and the conclusions to be drawn from them are published in the *Centralblatt für Bakteriologie und Parasitenkunde* for Jan. 23, 1896. The results from their investigations may be summarized as follows:

1. The injection of increasing doses of virulent typhoid bacilli or colon bacilli into dogs produces in the blood of these animals certain substances that possess a specific protective power against the kind of bacillus by which they are produced.

2. The ordinary blood serum of untreated animals possesses a protective power against the ordinary fatal doses of typhoid and colon bacilli, and also against small multiples of the fatal doses. The exact dose depends upon the quantity of serum injected beforehand.

3. The specific action of the antitoxin in the blood of animals injected with bacilli becomes evident when such quantities of bacteria are injected as are multiples of the quantity against which normal serum protects.

4. The specific antitoxic action is also evidenced when a mixture of bacteria are injected with the serum.

5. The typhoid serum protects against a somewhat larger dose of colon bacilli than normal serum and, *vice versa*, the colon serum protects against a somewhat larger dose of typhoid bacilli than normal serum. This fact would seem to indicate a family relationship between the two kinds of bacteria.

6. The specific serum does not protect against the substances contained in the bodies of dead bacteria in any higher degree than does normal, ordinary blood serum.

7. Injection of normal serum into the peritoneal cavity of guinea pigs and then, twenty-four hours later, injection of twice the fatal dose of dead bacilli, produce in two weeks immunity against 100 times the fatal quantity of living typhoid bacilli.

THE MILK SUPPLY OF CITIES.

The Report of Drs. S. C. Busey and Geo. M. Kober of Washington, D. C. on morbific and infectious milk, the advance sheets of which are now before us, constitutes a strong argument on behalf of the necessity for the sanitary control of dairies and of the milk supply of cities. According to the U. S. Census of 1890 the average annual production from sixteen and a half million milch cows was 5,209 million gallons of milk, 1,024 million pounds of butter and nearly nineteen million pounds of cheese. These large quantities give an indication of the extent of milk consumption, of the danger from an impure supply and of the temptation, from the monetary point of view, to the practice of fraudulent and more or less harmful adulterations. The official or legal standard composition of milk varies somewhat in different states and cities. It is lowest in New York, New Jersey and the District of Columbia, the requirements being 3 per cent of fat and 9 per cent of solids, not fat; it is highest in Massachusetts, 3.7 per cent fat and 9.3 per cent. solids, not fat. In England the standard is lower than in this country, 3 per cent. fat and 8.5 per cent. solids, not fat; but this class does not prevent adulteration by unscrupulous dealers. A common fraud appears to be the removal of cream and the addition of just enough separated milk to make a mixture that will come within the limit of the standard. Analyses of milk sold in New York city showed an average dilution with 33 per cent. water, the fraud amounting to $10,000 per day. The State inspector for New York found an average of 12 per cent. of water added and 20 per cent. of cream removed. According to Dr. Spiegelhalter, St. Louis, Mo., loses nearly $2,000 daily by the removal of cream. The District of Columbia secured the passage of a milk bill last year. Many instances of the abstraction of cream were discovered by the public analyst; but the prosecutions failed because the law provided a penalty only when something had been added to the milk and did not take into consideration milk which had been deprived either in whole or in part of its cream. In the city of Chicago a bureau of milk inspection was created in 1892 and the milk supply of the city has been improved materially thereby; yet in 1894 of 12,093 samples examined 4,320 were below the standard.

The operations of the analyst under a law requiring milk to be of standard quality is a protection to the pocket of the public; but the report of Drs. Busey and Kober shows that the dairies should be under sanitary control to prevent the propagation of disease by infected milk. This sanitary control should include inspection by competent veterinarians that the milk of all animals suffering from disease may be excluded from the supply. The diseases specially mentioned are tuberculosis, erysipelas, anthrax, pleuro-pneumonia, foot and mouth disease, septic and other fevers, specific enteritis and other intestinal disorders, rabies, tetanus, garget and other inflammatory conditions of the teats and udder. The milk of animals under treatment by medicaments and of animals five days before and five days after parturition is also held to be unfit for human consumption. The cow stables should be separate from other stock and poultry yards; they should be spacious, well ventilated and lighted, with cemented floors, proper drainage and clean hay or straw for bedding. The animals should not be allowed to feed on pastures with stagnant water or noxious weeds, particularly euphorbiaceous and ranunculaceous plants, nor upon the swill or products from distilleries, breweries, glucose factories, etc. The cows should be groomed daily and the teats and udders washed before milking with water previously boiled; and the requirements of cleanliness should apply with equal force to the milkmen, both in their persons and clothing. All persons engaged in handling the milk should be free from disease. Milk should not be permitted to leave a farm or dairy during the existence of typhoid fever, diphtheria or scarlet fever among the employes or inmates. The report cites 138 epidemics of typhoid fever, 74 of scarlet fever and 28 of diphtheria traceable to the milk supply. Of the 240 epidemics 187 were reported by English, thirty-one by American and nine by Scandinavian observers; while eight came from German, three from Australian and one each from French and Swiss sources. It is suggested that the infrequency of milk typhoid in France and Germany is due to the fact that milk is rarely used in

its raw state on the continent of Europe. To prevent loss under the restrictions necessary during the prevalence of infectious disease on a farm the utilization of the milk may be authorized for butter production after proper sterilization under the direction of the health board. The bottles for delivery should be cleansed by steam or a boiling solution of caustic soda, with subsequent washing in sterilized water. They should be closed with patent stoppers and properly labeled for specification of contents and identification of dealers. The retailer should be registered and be required to furnish a list of customers; and the names of the latter should be arranged on the index card system at the health office so that the simultaneous occurrence of infectious disease in families supplied by the same dairy or dealer may the more readily be discovered.

The needs of Washington city gave origin to this valuable report, which will be published in the report of the Health Officer of the District of Columbia; but there are few cities in the United States to which it will not give matter for consideration.

THE BROWN-SEQUARD METHOD OF TESTICULAR EXTRACT THERAPY.

The Brown-Séquardian theory of the tonic action of testicular extract has probably passed into the category of exploded fads in the opinion of at least the majority of the medical profession. It is a matter therefore of some interest when we see it brought forward again in a couple of scientific papers that make up nearly the whole of the latest issue of *Pflueger's Archiv*, and supported to a very considerable extent by physiologic experimental proofs. DR. OSKAR ZOTH and DR. FRITZ PREGL, of the physiologic institute of Graz, publish the results of ergographic (*i.e.*, dynamographic) investigations on the action of orchic extract in bodily fatigue and capacity, in which they find that, combined with exercise, the daily injections of this substance produce a very decided tonic effect, increasing the capacity for work considerably above that which would follow the exercise alone. This effect, moreover, was enduring and lasted for a considerable period after the discontinuance of the injections, and that it might, in short, be described as "tonic, eutrophic, and dynamogenic" in its effects on the system. DR. PREGL'S experiments, moreover, were directed largely to the exclusion of the influence of suggestion, to which these effects had been referred by FORD, and that of the glycerin which had served as the excipient, both of which influences he concludes from his investigations can be considered as out of the question as causes of the phenomena.

DR. ZOTH suggests as a practical test, the employment of these injections by athletes and the observation of their effects. So far this does not seem to have been seriously carried out, and the experiment is worth a trial by trainers who might in this way add something to our physiologic knowledge. A contribution of this kind from CORBETT, MAHER or FITZSIMMONS, would not, of course, elevate their occupation to the level of physiologic experiment, but would, perhaps, enable us to extract a little utility from what has at present not a single redeeming feature.

Another important collateral point is that of the value of the ovaries and testicles to the system otherwise than as simply organs of reproduction. If the injection of heterogeneous orchic extract has a direct tonic effect, what shall be the effect of the loss of the natural secretion by removal of the organ. This suggestion has, however, been already amply discussed in times past, but each new testimony to the truth, partial though it may be, of BROWN-SEQUARD'S theory revives it, and its practical applications in surgery are numerous enough to give it at all times an interest. The question as to the possible effect of the ovary corresponding to that of the male gland has been discussed by VARIOT and others, and may be considered as still, to some extent, open to discussion.

At all events, we can not say, with our present knowledge and the additions to it that are offered by investigations such as those here alluded to, as well as those of comparatively recent date by D'ARSONVAL, and others, that the subject is scientifically defunct, or that it has no standing in practical therapeutics with other methods and forms of serotherapy. Nor can we attribute, in the light of these latest investigations, the apparent beneficial effects of this method altogether to the influence of suggestion, as is done by FORD.

UPON GENERAL INFECTION BY THE BACILLUS PYOCYANEUS IN CHILDREN.

The bacillus pyocyaneus, obtained primarily as a contamination of pus in wounds, though definitely pathogenic for certain lower animals, notably rabbits, has but rarely been found as a primary cause of disease in man. Certain cases described by WILLIAMS and CAMERON (*Journal of Pathology and Bacteriology*, V. III, No. 4) being, beyond doubt, of this nature are therefore of more than usual interest. The three cases described seem to be the only ones recorded in which bacillus pyocyaneus has been found alone. There are many instances in which it has occurred in cases of septic infection in association with other microörganisms. The bacillus was found by these investigators in young marasmic children presenting a train of symptoms of emaciation, diarrhea, fever, muscular disorders, albuminuria and hemorrhages—the first and the last being the most prominent—indicating that the bacillus is distinctly pathogenic at an early age. How the disease originated, by what channel it gained entrance into the organism, is a matter of uncertainty. The authors refer to cutaneous lesions as a possible portal of entry, but such

lesions were not noted in any of these cases. The alimentary tract may have been the point of invasion. In two cases the bacillus was discovered in the contents of the small intestine. Signs of gastro-intestinal disturbance were among the first symptoms observed.

A careful bacteriologic examination of all cases of so-called "infantile marasmus" may demonstrate the distribution of this microörganism to be much more wide-spread and much more disastrous in early life than is generally believed.

"A GENERAL PRACTITIONER," OR ALL FOR MERCY'S SAKE.

As long ago as in the issue of this JOURNAL for Oct. 13, 1894, the promising merits of IAN MACLAREN, the now popular story-teller, were recognized. We there spoke of MACLAREN'S "A General Practitioner," as "a classic of its kind," although it was far from being in classic dress at that time; it was then to be found only in a penny paper of London, called the *British Weekly*. Since that time, the features of the Highland country doctor, DR. WEELUM MACLURE, have been made known all the world round in the "Bonnie Brier Bush" stories. And his physiognomy is everywhere recognized as that of one of the sturdiest and noblest medical characters that have ever appeared in fiction. If there is anywhere in fiction a more worthy, admirable and attractive personage than DR. MACLURE of Drumtochty, we will be thankful to have him pointed out to us. As his portrait has not, so far as we know, been seen in any medical gallery, we will here give space to a sketch taken from the earliest publication by MACLAREN:

"A tall, gaunt, loosely made man, without an ounce of superfluous flesh on his body, his face burned to a dark brick color by constant exposure to the weather, red hair and beard turning gray, honest blue eyes that look you ever in the face, huge hands with wrist bones like the shank of a ham, and a voice that hurled his salutations across his two fields, he suggested the moor rather than the drawing-room. But what a clever hand it was in an operation, as delicate as a woman's, and what a kindly voice it was in the humble room where the shepherd's wife was weeping by her man's bedside. He was 'ill pitten thegither' to begin with, but many of his physical defects were the penalty of his work, and endeared him to the glen in which he lived. That ugly scar that cut into his right eyebrow and gave him such a sinister expression, was got one night. His mare Jess slipped on the ice and laid him insensible eight miles from home. His form marked the big snow-storm in the fifties, when his horse missed the road in Glen Urtach, and they both rolled together in the drift. MACLURE escaped with a broken leg and three ribs, but he never walked like other men again. He could not swing himself into the saddle without making two attempts and holding Jess's mane. Neither can you 'warstle' through the peat bogs and snow drifts for forty winters without a touch of rheumatism. But they were honorable scars, and for such risks of life men get the Victoria Cross in other fields. MACLURE got nothing but the secret affection of the glen, which knew that no one had ever done one-tenth as much for it as this ungainly, twisted, battered figure, and I have seen a Drumtochty face soften at the sight of MACLURE limping to his horse."

The thing particularly interesting to medical men about the whole matter, is the claim made by the author, IAN MACLAREN, that his hero has been drawn from life, or rather, from the lives of several. In an address delivered before the Liverpool Medical Institute, he said:

"I am called upon to answer a question that has been often and fairly asked, Was there ever a doctor so self-forgetful and utterly Christian as WILLIAM MACLURE? To which I am proud to reply: On my conscience, not one man but many in Scotland and in the south country; I will dare to prophesy, also across the sea. It has been one man's good fortune to know four country doctors, not one of whom was without his faults —WEELUM was not perfect—but who, each one of them, might have sat for my hero. Three are now resting from their labors, and the fourth, if he should see these lines, would never have identified himself. Then I desire to thank my readers, and chiefly the medical profession, for the reception given to the doctor of Drumtochty. For many years I have desired to pay some tribute to a class whose services to the community at large are known to every countryman; but after the tale had gone forth my heart failed. For it might have been despised for the little grace of letters in the style, and because of the outward roughness of the man. But neither his biographer nor his circumstances have been able to obscure MACLURE, who has himself won all honest hearts and received afresh the recognition of his more distinguished brethren. From all parts of the English-speaking world letters have come in commendation of WILLIAM MACLURE, and many were from doctors who have received new courage. It is more honor than a new writer could ever have deserved, to receive the approbation of a profession whose charity puts us all to shame."

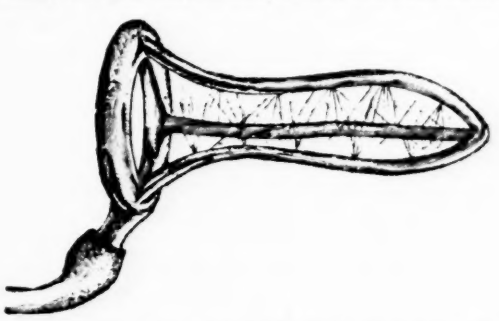
THE ATLANTA TRIP.

There is but one official special train from Chicago to Atlanta, and tickets should be purchased via the "Big Four" route. We have heard that one physician has sent circulars urging members to go with him by another line. The members will please remember that by patronizing the JOURNAL special they will have extra accommodations. The President, Board of Trustees, the Treasurer and other officers will be on board the JOURNAL special.

NEW INSTRUMENTS.

HOT WATER RECTAL SYRINGE.

Dr. Budin, of Paris, uses in his practice the little instrument



shown in the cut, to apply hot water in the treatment of hemorrhoids. It is all hollow, the base circle 2½ c. in diameter, and the three curved branches meeting 5 c. above it. The

water enters through a tube fastened to some receptacle above, and sprays the hemorrhoids through a series of small openings in the branches. The olive shape given to the instrument is to facilitate its entrance in the anus, where the sphincter holds it in place. If the hot water causes pain to the surrounding parts he has the patient placed in a bath, so that the water mixes at once with some at a lower temperature as it runs out of the anus.—*Revue Internat. de Méd. et de Chir.*, January 25.

THE PHONENDOSCOPE.

This instrument is claimed by its inventors, Bazzi and Bianchi, to render perceptible all the normal and morbid sounds in the body, far more distinctly than the ordinary stethoscope. It renders audible the sounds made by the fetus, by the circulation, the muscles, etc., and also locates displaced organs by the noises made by their contents. It resembles a watch in appearance, and the two ear tubes shown in the cut can be multiplied indefinitely, so that several can be listening at the same time. In ausculting a large surface, the disc *B* is simply placed upon it, and the tubes placed in operator's ears. The tube *A*, is inserted into this disc when it is desired to circumscribe the auscultation. The contour of an organ can be accurately determined by the sound made by its contents through the tube, as the operator lightly manipulates it with his fingers.—*Journal de Méd. de Paris*, January 26.

PUBLIC HEALTH.

The Sanitary Advantages of Employment of Criminals.—The *Medical Examiner* states that the New York Medical Association, through Dr. Austin Flint, chairman of the Committee on Criminology "has sent out a circular to the profession urging its influence and coöperation in the passage of a law for the employment of criminals in prisons, on the ground that idleness leads to discontent, criminal speculations and propensities, and finally, instead of correcting the prisoner, it makes him more confirmed in his hatred of organized society when he leaves prison walls than when he entered. A copy of the 'concurrent resolution' which passed the legislature last year is inclosed. It must be reënacted at this session before it comes to a popular vote, as it changes a provision of the recently adopted constitution. It should have the unanimous support of the medical profession of this State."

Request for Information Regarding Aerial Convection of Variola.—Dr. Reginald Dudfield, the well-known Medical Officer of Health for Paddington, writes to the *Public Health*, London, seeking for information on the above subject, both from home and foreign sources. The question is a highly important one and some of our American sanitarians may be led to comply with the request conveyed in the following letter: "I shall be greatly obliged to you if you will allow me to appeal to all medical officers of health for information on the subject of 'Aerial Infection' of smallpox. I am seeking for cases that have come to their knowledge within recent years, and shall be glad of any references to published facts. I shall especially welcome information from those in charge of smallpox hospitals. I have not been able to discover any literature on the subject giving any account of similar spread of infection in connection with hospitals in foreign countries. Perhaps some of your readers may be able to give me references hereon? I am, sir, yours faithfully, REGINALD DUDFIELD."

Death by Lightning.—The *Medical Examiner* has collected the statistics as to deaths by lightning, as follows: "For the four years 1890-93, according to the weather bureau, the number of deaths by lightning were 784, or an average of 196 a year. According to Mr. H. F. Kretzer, of St. Louis, Mo., for the five years 1883-87, there were 1,030 deaths by lightning, or an average of 206 per year. The work of lightning stroke is five times greater in the country than in the city. There is only one record to show what proportion of persons struck are killed outright, and that indicates that, out of 212, 74 were killed. Prof. McAdie thinks, therefore, that efforts to resuscitate should not cease till after the lapse of over an hour. Lightning brings about death by suspending animation through a paralysis of the respiratory centers. Stimulate the respiration, therefore, by the usual methods of artificial respiration, with or without the introduction of ordinary air, or of oxygen, or by means of the double bellows of Dr. Gibson."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General Marine-Hospital Service:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, February 15 to 22, 11 cases, 8 deaths.

Michigan: Greenbush Township, Ionia, Imlay Township, Riga Township, Saginaw, February 15 to 22, smallpox reported.

SMALLPOX—FOREIGN.

Antwerp, February 1 to 8, 2 cases, 1 death.
Cardiff, February 8 to 15, 3 cases.
Madras, January 17 to 24, 1 death.
Madrid, January 28 to February 11, 12 deaths.
Odessa, February 1 to 8, 3 cases.
Prague, February 1 to 8, 14 cases.
Rheims, February 8 to 15, 1 case.
St. Petersburg, February 1 to 8, 13 cases, 5 deaths.
Swansea, February 1 to 15, 1 case, 1 death,
Tuxpan, January 6 to February 1, 1 death.
Pernambuco, January 1 to 31, 203 cases, 52 deaths.

CHOLERA—FOREIGN.

Bombay, January 21 to 28, 5 deaths.
Calcutta, January 11 to 18, 48 deaths.
St. Petersburg, February 1 to 8, 7 cases, 5 deaths.

YELLOW FEVER—FOREIGN.

Cienfuego, February 16 to 23, 1 death.
Havana, February 13 to 20, 9 cases, 2 deaths.
Sagua la Grande, February 8 to 15, 5 cases.
San Juan, P. R. December 20 to January 17, 105 cases, 24 deaths.
Pernambuco, January 1 to 31, 5 cases, 3 deaths.

NECROLOGY.

J. HARRISON FORBES, M.D., of Brooklyn, died at St. Catherine's Hospital, that city, on February 6, from chronic cystitis culminating in acute nephritis. He was a graduate of the New York University Medical Department in the class of 1857, so that he had been in the profession nearly forty years. He was married, and his age, at the time of decease, was 76 years.

DR. DAVID W. MAULL one of the best known physicians of the State, died at his home in Wilmington, Del., February 22. Dr. Maull had been in failing health for some time. He was 65 years old, a native of Georgetown, Sussex County, and a son of Dr. George W. Maull.

Dr. Maull was educated in the schools of his native town, and was graduated from the Jefferson Medical College in 1853. He then served as surgeon on a steamer plying between Liverpool and Philadelphia. When the war broke out he enlisted in Company G, Delaware Volunteers and became a captain. After serving out his time he re-enlisted in Company E, and then became a surgeon. He was in nearly all the battles of the Army of the Potomac. He was promoted to be surgeon-in-chief of the Second Division of the Second Army Corps. After the war he settled as a practicing physician in Wilmington,

where he remained until his death. For six years he was the city vaccine physician. Dr. Maull contributed frequently to the medical journals. He also wrote an interesting memoir of General Thomas A. Smyth. In 1870 Dr. Maull was married to Miss Mary K. Buck. His wife and two children survive him.

MISCELLANY.

Charitable Bequests.—Under the will of Mrs. Mary Graydon, of New York, several charitable institutions are remembered with gifts amounting to $8,000.

Population of Rio de Janeiro.—According to the *Brazil-Medico*, the population of Rio de Janeiro is now 600,000. For the first fortnight in December there were 542 births and 680 deaths reported, with the usual overwhelming percentage of deaths from tuberculosis that prevails everywhere nowadays.

The "Medical Faculty" Society at Harvard University.—The above named society is composed of undergraduates, many of whom are aspirants for a livelihood in the legal profession and a few in the ministry, whose constitution and by-laws require of them the perpetuation of practical jokes of a sort sufficiently outrageous to merit expulsion from college. How the society came to select so great a misnomer for its title has not been explained.

Amherst College Hospital for Students.—Mr. G. D. Pratt, of Brooklyn, and of the class of 1893 at Amherst College, has given to that institution a fund sufficient for the erection of a hospital for undergraduates. The work will be begun in the coming spring. The members of the Pratt family, which is one not altogether disassociated from the production of illuminating oils, are nearly all the time engaged in devising liberal things for Amherst College.

Roentgen Photograph.—The surgeons of Vienna and Berlin believe that the Roentgen photograph is destined to render inestimable services to surgery. Case after case is reported where unsuspected formations were revealed by the photograph, indicating slight operations which restored patients to health and cured deformities. Half an hour is the shortest exposure possible, and most require an hour. The electric apparatus required is so expensive, $100 and upward, that few surgeons can use it yet in their private practice.

Music Graphically Recorded.—A simple little apparatus described in full in the *Revue Scient.* IV, 1, registers the energy, duration and form of each finger-touch upon the keys. A rubber tube runs under the keys, connecting with a Marey drum at each end. In studying music each one can read now for himself where he fails and where he succeeds; but the apparatus is especially recommended for psychologic examinations, where the patient is being examined without his or her knowledge. *Centralblatt f. Phys.*, Jan. 25, 1896.

Einhorn's Stomach Register.—The inventor calls it a gastrokinesograph, or gastrograph. It consists of a small platinum ball moving freely inside a hollow ball a trifle larger. The patient swallows them, and then every motion, contraction, expansion, etc., makes the inner ball move also, which brings it in contact with wires fastened inside the large ball, thus opening and closing an electric circuit. There is less movement in the fasting than in the full stomach; dilation of the stomach and cicatricial stenosis of the pylorus seem to induce more violent mechanical action, while there is very little in ulcus ventriculi. *Centralblatt für Phys.*, Jan. 25, 1896.

Anagyrin Localized in the Grain.—The *anagyris fetida* produces an alkaloid called anagyrin, which is derived from its grain-like fruit. Guérin has been making a special study of it recently and announces that combined with iodid or iodized potassium it produces a granulated precipitate, soluble in hyposulphite of soda. Combined with perchlorid of iron, a yellow-orange coloration is produced. With iodid of bismuth and potassium, a reddish-brown precipitate is formed; with iodid of mercury and potassium, a yellowish-white precipitate, and with picric acid, a yellowish precipitate. He queries whether it may not be identifiable with cytisin, like ulexin, sophorin and baptitoxin.

Imaginary Dyspepsia.—The *Gaz. degli Osp. e delle Chir.* of January 25, describes a curious case of a robust peasant woman suddenly attacked with acute dyspepsia, wasting away from actual starvation, until she entered the hospital for treatment, almost a skeleton. Examination failed to reveal any cause for gastric disturbance until the physicians became convinced it was an imaginary trouble, and treating her accordingly; she was soon discharged cured. Her idea that she could not digest did actually prevent her food from assimilating. When she left, her daily rations were twenty eggs and a liter and a half of milk, which she digested perfectly.

City Civil Service Notice.—The City Civil Service Commission will hold an examination in the Council Chambers Saturday, March 14, 1896, at 1:30 P.M., for the position of inspector in the City Health Department. All candidates must be graduates in medicine and present evidence of recognition by the Illinois State Board of Health. Applications in proper form must be filed at the office of the City Civil Service Commission, Chicago, not later than Wednesday, March 11, at 12 o'clock.

WM. CUTHBERTSON,
M. L. GOODKIND,
R. A. EDWARDS,
S. C. PLUMMER,
JOSEPH R. HAWLEY.

Strychnin Dispensed for Phenacetin; Heavy Penalty. The London correspondent of the *American Practitioner and News* writes of a remarkably heavy penalty administered in an English court, following a death due to an error in dispensing. He says: "A short time ago a Birmingham manufacturer died from taking strychnin supplied to him by a retail chemist for phenacetin. It was shown at the time that the retail chemist supplied only that which had been furnished to him by the wholesale chemist. At the present Birmingham Assizes an action was entered by the widow of the deceased to recover damages, both the wholesale firm and the retailer being sued. The plaintiff's case was concluded on the second day of the trial, when counsel stated that terms had been arranged. The record was withdrawn, the wholesale chemists paying plaintiff about $14,000 and costs, the retailer paying his own costs. The representative of the wholesale chemists explained that how the mistake arose was a mystery, and the defendants desired to act honorably. The judge expressed his satisfaction with the terms stated."

Provisions for Treatment of Paupers.—Several points of considerable importance to physicians have been decided by the supreme judicial court of Maine, in the case of Goodrich vs. City of Waterville. This decision was rendered May 21, 1895, but has just been reported in the advance sheets of 33 "Atlantic Reporter," 659. The court holds that all persons acting under the employment of town or city officers must take notice at their peril of the extent of the authority of such officers. When a town or city has already provided for the medical treatment of its sick paupers by the election of a town or city physician, and he is ready and willing and competent to attend a sick pauper, so that no necessity exists for employing any other, it is undoubtedly the duty of the overseers of the poor to call him when one of the paupers under their care is sick and in need of medical treatment. In such a case the overseers have no authority to employ any other; and, if others are employed, they are chargeable with notice that they will have no right to call upon the town or city to compensate them for their services. Furthermore, it being provided by statute in Maine (Rev. St. c. 3, sec. 36) that "no member of a city government shall be interested, directly or indirectly, in any contract

entered into by such government while he is a member thereof," the court holds that, one of the plaintiffs being a member of the city council, no action can be maintained to recover for medical services rendered by his firm to a pauper of his city. It is a contract in which a member of the city government is directly interested, and for that reason is void by the statute.

Continuances for Sickness.—In a prosecution for a felony, the defendant applied for a continuance on the ground of his sickness and disability. The good faith of the application was challenged by the prosecution, and on its request a committee of physicians was appointed by the court to visit the defendant and report upon his condition, which they did; and they were examined on the subject orally in open court. Afterward another committee of physicians was appointed to treat the defendant until ready for trial, and to see that nothing was given him except under their direction, and they took charge of the defendant accordingly for some days, when, the case being again called, another application for continuance was made, which, upon hearing evidence, the court overruled, finding that the defendant was able to be placed upon trial, and was in a fit and suitable condition physically to be present. On appeal, the supreme court of Kansas holds, State vs. Rogers, decided January 11, 1896, that there was no abuse of discretion in overruling the application for a continuance.

Comparative Frequency of Fractures as Shown by U. S. Marine-Hospital Reports (1878 to 1894 inclusive).—Five thousand four hundred and fifty-six fractures were distributed as follows:

Vault of skull	131	Fibula (alone)	382
Base of skull	43	Bones of foot (not specified)	147
Facial bones	239	Cervix femoris	12
Inferior maxilla	65	Humerus	205
Hyoid bone	4	Bones of forearm	728
Sternum	11	Radius (alone)	114
Clavicle	305	Ulna alone)	55
Scapula	61	Bones of hand (including) carpal, metacarpal and phalanges	499
Vertebræ	40	Bones of foot (including) tarsus, metatarsus and phalanges	41
Ribs	965	Bones of the leg, together and singly	1,251
Pelvic bones (not specified)	43	Bones of forearm, together and singly	897
Coccyx	1	Bones of foot, specified and not specified	188
Sacrum	1		
Femur	411		
Neck of femur	29		
Patella	113		
Both bones of leg	539		
Tibia (alone)	330		

Of 570 fractures, occurring after 1886, the bones of forearm were specified as follows: Radius, 244; ulna, 139; both bones of forearm, 187.

Of 112 cases, recorded after 1886: Metatarsus, 47; phalanges, 39, tarsus, 26.

Deaths from fractures and complications:

Vault of skull	44	Pelvis	5
Base of skull	23	Humerus	2
Facial bones	3	Forearm	6
Hyoid bones	1	Carpus	1
Clavicle	3	Femur	20
Ribs	7	Tibia	2
Ribs and spine	1	Leg, both bones	19
Spine	15	Metatarsus	1
Scapula	1	Total	154

Acute Fatal Dilatation of the Stomach.—Boas distinguishes two forms of acute gastric atony, the first caused by the overcrowding the stomach and the consequent putrefaction and formation of gases; and the second produced by some acute disturbance in the stomach musculature. Bamberger asserts that gastric atony is very apt to follow or accompany diseases like typhus, cholera, puerperal fever, chlorosis and tuberculosis. But this gradual degeneration is more a myasthenic atony than a dilatatio ventriculi. Albu writes to the *Deutsche Med. Wochensch.* of February 13, quoting the above and other authorities, and then describes the case of a young man who came to the hospital with a typical scarlet fever, from which he was recovering nicely when suddenly, on the eleventh day, with no errors in diet, he was taken with vomiting, pain and distention of the stomach, which swelled and puffed up the abdomen with it, accompanied by apathy, coma and then delirium and death. No peristaltic motion was visible, and the vomiting ceased when stomach had attained its largest dimensions. Science has only recently learned to recognize the toxic nature of the paralysis which occurs in the different parts of the nervous system after various acute infective diseases. The influence of some toxic substance or substances on the nerves which communicate with the musculature of the stomach is the writer's conclusion from the case above.

Bravery of a Medical Man.—The *Medical Press and Circular* for February 5 has the following account of the brave action of a Welsh physician:

"The late disastrous explosion at Tylorstown, South Wales, was the occasion of much courageous rescue work. Among other noteworthy incidents of the kind, we are pleased to chronicle the bravery of Dr. Thomas Morris, the medical officer of the collieries where the disaster occurred. As soon as the state of the gearing permitted the descent of the rescue party, the doctor went down and spent the whole day underground, where he did much service among the injured survivors. In the afternoon he was summoned to a wounded man who lay a mile and a quarter along one of the workings. To reach him the doctor had to scramble and struggle as best he could through many parts of the wrecked workings. The injured man was unconscious, and was kept alive by artificial respiration, conducted at intervals on the wearisome and dangerous journey back to the pit's mouth. The workmen of the district at a local meeting passed a resolution thanking Dr. Morris for the noble efforts he had made in the work of exploration, and in saving the life of the collier Phillips. This kind of heroism is less conspicuous but not a whit the less sterling than deeds of bravery done upon the battlefield."

Liability of Charitable Corporations for Negligence of Servants.—Under authority of the legislature of the State of Connecticut the Waterbury Hospital was organized "for the purpose of furnishing medical and surgical care, nurses, medicines and food to patients suffering from disease or from injuries." It has no capital stock, and its members can derive no profit from the corporation. These features, the supreme court of errors of the State says, clearly indicate a "charitable corporation." To this hospital Hugh Hearns applied for treatment of a fractured kneecap. He subsequently sued it for damages for injuries alleged to have been caused by the unskillful and negligent treatment which he received at the hospital. (Hearns vs. Waterbury Hospital.) Judgment was rendered for the defendant, which the above court affirms. Its decision, though handed down April 5, 1895, has but just been made accessible in the advance sheets of 33 "Atlantic Reporter," 595, and is of unusual interest, not only because it is the first decision of the question in that State, but because of the exceptional length at which the court discusses it. The result is made to depend on the one question of liability of such a hospital for the negligence of its servants. The court thinks the law does not justify the extension of the doctrine of respondeat superior, making the master answer, to such a case as this. It deems it enough to say that a charitable corporation of this character, whatever may be the principle that controls its liability for corporate neglect in the performance of a corporate duty, is not liable, on grounds of public policy, for injuries caused by personal wrongful neglect in the performance of his duty by a servant whom it has selected with due care; but in such case the servant is alone responsible for his own wrong.

Autodigestion of the Human Pancreas.—Chiari (*Archiv für Heilkunde*, B. xvii, 1896) publishes a study of autodigestion of the pancreas and reaches the conclusion that very often there occurs a post-mortal digestion or necrosis in the pancreas; this may also occur during the agony, and even, as described by Chiari in two cases, during the full bloom of life in which the autodigestion showed itself in the form of local necrosis of the pancreas around which a reactive chronic interstitial pancreatitis developed. These areas were free from bacteria. The conditions in the pancreas would consequently be similar to those in the stomach in which we recognize a post-mortal, an intra-agonal, and are intra-vital self-digestion. Several authors have already referred to possibility of the pancreatic

tissue digesting itself. In 1879 Klebs expressed himself as believing that the cause of hemorrhages into the pancreas might be found in the corrosive action of its secretions. Gussenbauer, Salzer and Tilger all refer to the likelihood that this process may play an important part in the production of pancreatic cysts. Chiari believes that self-digestion will explain many obscure cases of pancreatic hemorrhage, and of gangrene of the pancreas, the bacteria from the intestinal tract finding a suitable soil in the necrotic pancreatic tissue.

Why does not the pancreas always digest itself? Obstruction to outflow of pancreatic juice does not cause digestion as shown by the experiments of Senn and Heidenhain in which obstruction of duct of Wirsung was artificially produced without direct destruction of the glandular structure. In all probability the cells of the pancreas must first be changed in some way before digestion can occur.

Pustula Maligna followed by Hemorrhagic Septicemia Produced by a Specific Bacillus.—We know for a fact that the anthrax bacillus often prepares a soil for an invasion by another kind of bacillus whose action is usually beneficial. But occasionally the secondary bacilli prove virulently poisonous. Babes and Pop, of Bucharest, describe minutely such a case in the *Deutsche med. Wochenschrift* of January 23. A pustula maligna on a man of 30 was followed by a fatal hemorrhagic inflammation of the jejunum and multiple hemorrhages in lungs, pleura, kidneys, etc., with a notable absence of the anatomic pathologic indications of splenic fever. Bacteriologic tests showed anthrax bacilli present in the carbuncle and nowhere else. Later they disappeared and were replaced by another bacillus which invaded the whole organism and were encountered everywhere at the autopsy. The writers believe that this second bacillus belongs to a great group of saprogenic bacilli which includes many of the better known abdominal and putrefaction-producing bacteria. The cultures showed that it resembles the bacillus coli and the typhoid bacillus, but is usually more slender, and differs from them also by the way in which it spreads out on agar agar in a thin, homogeneous transparent layer, with long finger-like projections on the borders, by its liquefaction of gelatin, by its swelling and blister-like formations, by its being sluggishly motile and also by its extensive formation of by-products. Different animals inoculated with this virulent bacillus furnished interesting experiences which are described in detail, all of them showing the same peculiar tendency to hemorrhages.

Elsner's Method of Early Bacteriologic Diagnosis of Typhoid Fever.—Elsner announces the discovery of a means to distinguish the typhoid bacillus in the evacuations and differentiate it from the bacillus coli in twenty-four to forty-eight hours. He experimented with bouillon made from fish, from reptiles, beets and all kinds of vegetables, until he found a medium that will only make cultures of the typhoid bacillus and bacillus coli, and these cultures present such characteristics that they can be differentiated with the naked eye. His medium is prepared as follows: He boils gelatin with a decoction of potato and adds a triturated solution of soda in sufficient quantity to produce the same degree of acidity as in Holtz's medium. This he filters and sterilizes. The liquid is then poured into Erlenmeyer tubes and completed by the addition of iodid of potassium, in a ratio of 1 to 100. The culture is then made and poured out on plates. In twenty-four hours there are colonies of bacilli coli, and in forty-eight, the typhoid colonies develop, easily recognized as small transparent points, finely granulated, in the midst of the luxuriant brownish growth of the bacilli coli. This medium is exceedingly susceptible to cultures, experiments showing that the typhoid colonies would develop when the liquid only contained one part culture to eight thousand million parts liquid. Other scientists who have experimented with this new medium find it all that Elsner claims. They also call attention to the fact that the typhoid bacilli diminish in numbers as convalescence progresses, and if their numbers keep up, a relapse may be expected.—*Revue Internal de Méd. et de Chir.*, January 25.

To Ward off Malaria. Since the disastrous Madagascar expedition, the French have been studying how to fight malaria in the countries where it prevails. The conclusions of a recent treatise on the subject by Dr. Maurel, are: 1. To administer quinin in preventive doses, .75 to 1 gram, at intervals of four or five days, is considered sufficient. 2. As the germs are in the atmosphere and are breathed into the lungs, troops must be commanded to keep their mouths shut when marching, as breathing air filtered through the nose, is much less dangerous. 3. Malarial districts, marshes, etc., must be avoided and habitations located 200 to 300 meters above them where possible. No work should be permitted in the heat of the day. Houses should be surrounded with trees at least their own height, and windows should be glazed to keep out the evening dew. Exposure to this dew must be strictly avoided as far as possible. 4. Europeans must not attempt to cultivate the ground in the intertropical regions. It is death to them, but does not injure negroes or other natives, who should be secured for this purpose. If Europeans respect this law of nature, their malarial attacks are much less frequent and rarely fatal. Even in hotbeds of malaria, Europeans can conduct a campaign or carry on business enterprises if they obey the above regulations. Drainage, etc., will in time partially, if not wholly, reclaim the most malarial countries, but the Caucasian must always bear in mind that he can direct, oversee, practice a profession, fight, paint or do anything he chooses except till the soil. This treatise will soon be followed by another on preventive therapeutics.—*Bulletin of the Acad. de Méd.*, January 21.

Tuberculosis of Parrots.—Straus, whose extensive researches upon tuberculosis in various animals as well as in man is well known, says that tuberculosis in the parrot presents several features which differ from those peculiar to the classical form of avian tuberculous disease.

Tuberculosis is not uncommon in parrots. Froehner found that in 154 parrots treated at the veterinary school in Berlin 56 were proven by demonstration of the bacilli to have tuberculosis. Cadiot found eleven out of thirty-five parrots to have tuberculous lesions. Cadiot made inoculations with the tuberculous material from the parrot into guinea pigs and there followed an eruption of general tuberculosis. In the parrot the disease is characterized by the frequent involvement of the skin and of the mucous orifices, whereas in fowls tuberculosis prefers the digestive tract and its adnexa. The tuberculous lesions of the parrot consist of grayish or brownish tumors, often having a horny appearance. The swellings may be multiple. The skin of the head is the seat of predilection. The internal organs are involved only occasionally, the lungs oftener than the liver and the intestines. The parrot, living in a state of captivity, not coming in contact with other birds, but being in close contact with human beings, is most likely infected with the products of human tuberculosis. It would consequently be of interest to determine the exact nature of tuberculosis in parrots, whether it is simply the result of transplantation of human tuberculosis or presents the characters of ordinary avian tuberculous disease. Straus examined two cases of parrot tuberculosis with this object in view and found that the disease presented exactly the same features as tuberculosis in man. This was shown by the result of inoculation into guinea pigs in which it produced the lesions that follow the introduction of human tuberculous products and those peculiar to the avian. Inoculations of the lesions in parrots into the peritoneal cavity of fowls were without effect. It consequently seems clear that it is through its contact with man that the parrot becomes tuberculous. When passed through a bird like the parrot human tuberculosis is not changed into avian but retains its fundamental characteristics.

Langendorff's New Method of Keeping the Hearts of Animals alive for Scientific Investigation.—This method does not supersede Martin's method, but supplements it, with especial reference to the study of the cardiac muscles, their innervation, etc. The animal (dog, cat, rabbit) is killed by bleeding. The blood is defibrinated and filtered into the injecting flask, which is kept at the temperature of the body. Then the heart is cut out and a tube inserted in the rising part of the aorta which is fed from the flask of blood. The heart is then put in a warm place and blood forced in by pressure until the semilunar valves close and it is impossible to force open the left chamber. The heart stands upright on a special standard contrived for it, with a hook in the apex to hold it straight. The blood to be injected must flow at a certain pressure, equally, and for a long time, which requires some ingenuity to accomplish. But as soon as it begins to flow through the coronary arteries the heart begins to pulsate as in life. Haller's theory that it is necessary to have blood flowing through the chambers to produce pulsation, is proved erroneous by these experiments, in which they are empty of blood. The heart can be made to pulsate in this way hours after death, or until the heart muscle becomes too stiff. Langendorff noticed: 1. That poisons, like muscarin, atropin and the salts of potash produced their usual effect on the heart. 2. That, like the frog's heart, the pulsations were more rapid the warmer the temperature. 3. That the effect of tetanizing is complete; only in a very few cases did the vagus fail to respond. 4. As the action of the semilunar valves ceases, the heart makes but one sound, which coincides with the systole of the chambers. 5. The same as with the frog's heart the pulsations will cease if salt solution is made to flow through the arteries instead of blood. But a renewal of the supply of blood will start the pulsations afresh even if the heart seems almost motionless. 6. Electric shocks produce a refractory phase the same as with a frog's heart; tetanizing produces "waves" as in living animals. 7. These experiments also contradict the theories of Bezold, Cohnheim, Schulthess and Rechberg that obstruction of the coronary produces "waves" and then stops the heart altogether. Stoppage of the circulation never produces "waves," and a fresh supply of blood introduced always starts up the heart again at once.—*Centralbl. für Phys.*, Jan. 25, 1896.

Sale of Business with Agreement not to Practice Medicine.—A practicing physician in Anniston, Ala., sold, for $125, his horse, buggy, and medical practice, agreeing as a part of the contract, not to practice his profession in that city for two years, and making the further stipulation that in case of failure to comply with the agreement he would pay, as a forfeiture, the sum of $200. In a decision rendered Dec. 17, 1895, the supreme court of Alabama, McCurry vs. Gibson, upholds this contract. It says that it is settled by the authorities that the purchase by one party of the property and good will of the business of another furnishes a sufficient consideration for an agreement by the latter, in enhancement of the value of the good will, not to compete with him in the conduct of the business. The rule is the same when a physician sells his property and practice to a professional brother. It was at an early day supposed that the consideration in such cases must be adequate, that is, equal in value to the restraint imposed; but this idea has been exploded. The contract in this case showed upon its face a sufficient consideration, and the court will not assume the task of ascertaining whether the party selling out made a good or a bad bargain. It contained a valid agreement for the payment of $200, as fixed damages, for its breach. And that stipulation is no barrier in the way of granting relief by injunction, which is a negative specific performance of the contract; the purchaser having his election to sue for damages or to have the agreement performed according to its terms. Neither is it necessary to show that a physician is actually practicing before he can contract for the property and good will of another, nor to show that he had at that time complied with the legal requirements for practicing medicine at that place. A license is not necessary to making such a contract, especially where it does not appear that an infraction of the law with regard to practicing medicine is contemplated. Furthermore, in Alabama, it would seem that it is not required that a physician have his certificate of qualification recorded in a county to which he removes after it has been issued and once properly recorded.

Doctors Should Attend the Primaries.—At a recent meeting of the Physicians' Club of Chicago, "The Management of the Health Department of Large Cities," was discussed. Dr. Truman W. Miller said: "I do not care to say very much on this subject. I have attended several meetings and have heard discussions, all tending in the same direction, the laudation of each other to the detriment of somebody else. The preceding speakers have called emphatically for *action*. I have heard that call for many years. I have seen none of it. Your Chairman was kind enough to say that I was a practical man. I believe that has been my reputation, and I do not want to lose it. You discuss this subject very freely, but you accomplish nothing. It is the old and oft-repeated story, the ins and the outs. Those that are in try to stay in; those that are out try to get in. Gentlemen, if you ever wish to do anything in this matter, why don't you go at it like men and do it. Take hold of it and do something, instead of having little gatherings of this kind, with a scattering few from different parts of the city. This is a subject that needs to be discussed in the gravest and most careful manner. Devote a little of your time to putting men in these places who are competent to fill them and who are able to do the work wisely and well, and not simply spend the most of your time in trying to get the places yourselves. I speak frankly about this matter. We who are present are too small in number to speak for the entire profession. The medical profession of this city has a voice, and if used in the proper place, we can carry anything in this city without a doubt. But, gentlemen, it is not at the Physicians' Club that we shall succeed in doing it. It is at the places where most of you never go, the primaries and the polls. You do not go there with your friends and neighbors. If you did and performed your duty as citizens, you could sweep every primary in the city. If you will talk with the majority of your friends and neighbors and tell them what you think is right, regarding the health department of a great city like this, and by whom it should be run, you can accomplish a great deal. But do you ever do it? You wait until other men are elected to these positions, then it is too late. Doctors should come out like men, state their position, and enforce it. Look at the community in which we all live. Look at the people you can control; how many votes you can poll in the primary; how many people you can take along with you to carry anything that is worthy of attention. There are other things besides health matters that require attention, but they must be considered altogether. I shall be only too glad to join all of you if you will come together and make a decided stand as to what you are willing to do and what you desire to be done. If we work jointly we can change the election at any time in spite of any program that may be laid out by anyone in this city. It can be overturned at once and carried our way easily. I deprecate discussions which have for their object the criticism of the business man now at the head of the health department as well as his assistants. The important question for us to discuss is, Who shall be their successors? Go to the primaries and vote and try to put men in these positions who can creditably and thoroughly fill them. It will redound far more to your credit to do this than to waste time in fruitless criticism of the present officers of the health department. Interview the candidates for aldermen yourselves, attend the primaries, state clearly your views in the ward clubs of your respective parties, and then you will accomplish what we all desire to see: A thoroughly reorganized health department for Chicago and a competent medical man at its head.

A Medico-Literary Career.—Dr. Talcott Williams, writing for the *Book News*, February, gives an interesting sketch of the career of Dr. Eugene Coleman Savidge, a newly risen luminary in American literature: Dr. Savidge, though hardly more than thirty years of age, has already attained an enviable position in the two distinct yet compatible fields of medicine and letters. Notwithstanding active railroad work, he traveled extensively in America, studied medicine, edited the *Expressman*, a journal published in New York; wrote "Wallingford," a novel, and contributed many descriptive articles to various newspaper syndicates. Resigning from the railroad, with unusually warm tributes from his chief, he went to Philadelphia and wrote the "Gallery of Eminent Men," and also the Pennsylvania names for Appleton's "Encyclopedia of Biography." "The Life and Times of Brewster" followed, and was a signal success; Chief Justice Paxson pronounced it "the best and most interesting book of the kind he had ever read;" the Philadelphia *Ledger* and *Record* stamped it as "a model piece of work," and the New York *Times* and *Tribune* characterized it as "inspiring." With the proceeds of his literary work he completed his medical studies in Paris. Dr. Savidge has achieved distinct success in "The American in Paris," his last book. Says the New York *World*: "'The American in Paris' barely escapes being a great novel and *the* American novel. It is certainly the best of the year on either side of the Atlantic, not even excepting Zola's 'Lourdes,' or Crawford's 'Casa Braccio.' As a historical novel of our own time, nothing like it for boldness and audacity has ever been printed. Dr. Savidge is one of the most successful of New York's younger gynecologists. He is an accomplished linguist, having taken his degrees in letters and sciences, as also his first doctorate, from the University of France. He was externe at the Charity Hospital, Paris, and subsequently resident gynecologist to Roosevelt Hospital and the Sloane Maternity Hospital of New York, and is now one of visiting gynecologists to Roosevelt Hospital (out department), and has just been elected attending gynecologist to St. Mark's Hospital, New York." Dr. Savidge's earlier journalistic work comprised studies of American localities and peoples, including the Mormons, the Creoles, the Indians, the negroes, miners and frontiersmen, and the vintage and irrigation interests of Southern California—studies which were combined with the quest of business ends for the railroad. His biographical work reaches nearly one hundred biographies, and was undertaken with the specific design of meeting and studying successful American men.

Practical Notes.

Salolized Vaselin.—Salol dissolved in vaselin does not irritate the skin nor inflame diseased tissues, while yet it retains all its healing and antiseptic properties. Colombini recommends the use of it especially on ulcers.—*Nouv. Remèdes*, February 8.

Asafetida in Gynecology.—Warman recommends this drug in the *D. Frauenarzt*, August, 1895, as invaluable in soothing irritation in the uterus, counteracting a tendency to abortion and relieving the frequent constipation and nervousness of pregnant women.—*Nouveaux Remèdes*, February 8.

Total Thermo-cauterectomy of the Uterus.—A Hungarian medical journal describes an operation where the uterus was entirely removed, without the use of scissors or knife or the loss of any blood. A cancerous infection of the uterus rendered these precautions necessary to prevent secondary infection. The ligatures were seized with the hot instruments but were not detached for forty-eight hours.—*Centralbl. für Chir.* January 25.

Pancreatic Cyst and Twisted Kidney.—A pancreatic cyst recently operated upon in Dresden discharged 3500 c.c. of a greenish brown fluid strongly impregnated with cholesterin. In growing it had compressed the kidney ⅓ to ¼ its normal size, and twisted it half around. Complete recovery followed. The opening was made from the right twelfth rib, curving around to near the spina ant. sup. The cyst lay in the intraperitoneal region and was not tapped for several days after opening had been made, to promote adherences.—*Centralbl. für Chir.*, January 25.

Malarial Eruption.—A woman of 40 was suddenly attacked with a peculiar eruption on the nose, which discharged a serous fluid every morning with a burning sensation, and grew better toward afternoon. She had been living in a malarious region and had suffered from intermittent pneumonia which only yielded to large doses of quinin. Guided by this, quinin was ordered for the eruption, which had been treated in vain with almost every other known remedy. In forty-eight hours the congestions had ceased and in four days the entire eruption had vanished.—*Ther. Wochenschrift* of January 26.

Pressure Necessary to Absorption.—Hamburger of Utrecht has been making an exhaustive study of the processes of absorption in the tissues with specially prepared apparatus, experimenting on dogs and also with artificially prepared membranes. He announces that there is no absorption if there is no pressure, and that absorption in the intestines is directly dependent upon the pressure. This pressure is produced by respiration, the peristaltic action of the intestines and by the weight of the bowels as they press against each other.—*Centralbl. für Phys.*, January 25.

Guaiac in Oil as a Local Anesthetic in Optical Operations.—One gram of the guaiac crystals in 10 grams of sterilized oil, is the proportion recommended by Bellencontre, quoted in the *Gazette Médicale de Liège*, February 6. He uses a gram syringe supplied with a platinum needle. This he inserts into the tissue, especially if the lid is to be operated on, carrying it as deep and parallel to the path of the knife. While withdrawing the needle he pushes the piston so as to distribute the oil smoothly and regularly while using the smallest possible amount. Three drops of the oil will suffice in most cases, and Bellencontre has never used over fifteen. In severe inflammation, however, the pain of the injection is almost equal to that of the operation. Guaiac is useful, however, in certain cases, as it produces no general nor local accidents, and can be ased on children or where there is cardiac trouble when cocain is counter-indicated.

Malaria Treated with Chlorhydrate of Phenocol.—The *Méd. Obozriénie*, 1895, No. 9, reports three cases of malaria, upon which quinin produced no effect, successfully treated with the chlorhydrate of phenocol. In first case fever disappeared after third powder (0.6 gram each) and complete recovery followed the twenty-sixth. Second case, intense neuralgia of the left trigeminal from 8 A.M. till 6 P.M. relieved by two powders and completely cured with twenty-four powders, same dose as above, three powders a day. Third case, a daily hectic fever with such exhaustion that incipient tuberculosis was suspected. No benefit from quinin, arsenic or methylen blue. Fever ended with fourth powder, same dose as above, and complete recovery coincided with twenty-fifth powder, equal in all to fifteen grams chlorhydrate of phenocol.

Creosote in Tuberculosis.—At a recent meeting of the Soc. Méd. des Hopitaux the use of creosote in tuberculosis was discussed, and some members claimed great advantages from its use, while others asserted that the improvement came from the better care and food received by the patient in the hospital, and not from the treatment. All agreed that it did benefit the scrofulous form, and that its use was counterindicated wherever there was fever, dyspepsia, or a tendency to congestions, hemoptysis, or tachycardia. Burlureaux warmly endorsed the use of creosoted oil in all other cases, and in large doses, although he reported at the same time a pseudo-meningitic accident following injections amounting to 9.30 grams in one patient.—*Gaz. Méd. de Liège*, February 6.

Trephining a Suborbital Abscess.—A delicate and interesting operation is Michel's new method of operating upon a suborbital abscess where the frontal sinus is suppurating. Jurass treats it with a naso-frontal catheter, Schoeffer perforates the bone above, and Panas trephines the orbit. But Michel trephines the frontal wall of the sinus. He applies a trephining crown 5 mm. in size, at a tangent to the two sides of the angle formed by the vertical median line and the line of the two cavities. This opens a larger space and has the least disfigur-

ing results. The pus cavity is drained through the naso-frontal passage, according to Guillemain, or by Rollet's method of using the suborbital fistula.—*Province Médicale*, January 11.

Nephrotomy for Complications of Cancer of the Uterus.—A writer in the *Centralblatt für Chirurgie*, January 26, questions the advisability of prolonging the life and sufferings of persons afflicted with inoperable cancer of the uterus, when the compression causes occlusion of the ureter, by operating for the latter complication. Jayle and Labbé describe three cases of this kind treated by simple nephrotomy and keeping the kidney fistula open. Patients lived afterward 19, 73 and 106 days. Their ages were from 32 to 43 years. The first died from suppuration of the kidneys; the second succumbed to cachexia. Le Dentu records a similar operation, but patient died in thirteen days. Picqué treated a patient in this way, who survived fifteen weeks.—*Ann. de Gyn.*, September, 1895.

Lupus and Syphilis Differentiated.—Lupus usually develops on the face and hands but occasionally it is found on the body. One case described in the *Gazette Médicale de Liège*, Feb. 6, 1896, had two large patches each side of the spinal column, which were treated by scraping with Volkmann's curette and with Vidal's for the smaller humps, after a general and local anesthetic had been administered, and then carefully thermo-cauterized and dressed with iodoform and sublimated gauze. The surface healed with healthy granulations and recovery ensued. The chronic character of lupus is a guide in differentiating it from syphilis. It is not always easy to differentiate ulcer of the tongue. It can be traumatic, cancerous, tuberculous or syphilitic. The history of the case is a guide; the cancerous does not appear before 40: the tuberculous is torpid and only appears in latest stages of disease. Although there may be no other evidences of syphilis, yet it is safe to treat it as such if the above points exclude the other causes. Daily touching with a 10 per cent. solution of chromic acid (Dühring) is an efficient supplement to other treatment.

New Method of Puncturing and Opening the Pericardium.—In cutting into the pericardium care must be taken not to injure the internal breast and the heart itself. Delorme and Mignon, who have been making a study of this subject, offer the following suggestions: Tests made with sixty cadavers to determine the connection between the left edge of the pleura and the left edge of the sternum, convinced the operators that the former passes under the latter as far down as the fifth intercostal space. Below this it spreads away from it. Consequently they recommend that the opening should be made in the fifth or sixth intercostal space, and even then it is only by the greatest care that the operator does not open into the pleura, which would inoculate it with pus from the pericardium, and lead to serious trouble. The recommended method is:

1. Puncture. Insert the trocar lengthwise of the sternum opposite the fourth or fifth intercostal space. Then carry the needle flat against the posterior surface of the sternum about the depth of a centimeter. Then raise it upright and push it down and back. This punctures the pericardium alone.

2. To open the pericardium. They cut the cartilages of the fifth and sixth ribs along the sternum, then detach the pleura with the fingers, when the pericardium will be exposed to view, which can be seized with pincers and pulled out enough to puncture and open with a grooved director. These new methods obviate all the inconveniences of the old-fashioned methods.

Deodorization of Iodoform.—The *Journal de Médecine* of January 19, republishes the following from the *Presse Médicale* prefacing it with the query: Why not use di-iodoform? This has all the properties of simple iodoform without any odor, as Hallopeau demonstrated before the Société de Thérapie, in 1894. Jaksch observed that all the antiseptics with a specific odor possessed the property of disguising the odor of iodoform, while their own became scarcely perceptible. Thymol, naphthalin, tar and creolin can be used in this way, preferably the latter, in the proportion of 1 to 2 per cent. This produces a brownish powder with a mild aromatic odor. Oppler suggests pulverized coffee in a proportion of ⅓ to ¼. Ten per cent. conmarin or vanillin disguises the odor of iodoform, and also acid of cinnamon in equal quantity to the iodoform. Laura Goodman observed that after a menthol pencil had been left an hour or two in a bottle of iodoform the odor had disappeared. There is a bituminous iodoform made by a secret process; and brownish mica-like scales with a metallic luster, are produced by blending tar with the iodoform to the point of deodorization. Kay made a 10 per cent. paste of tar that had no odor except that of the tar; 5 per cent. produces a powder in which the iodoform is not recognized. Negel's pills are made thus: 3 grams iodoform, 15 grams tar and 0.60 grams extract of opium for 120 pills, administered eight a day. Cantrelli mixes equal parts of iodoform, essence of menthol and essence of lavender.

Tuberculous Infection in Hospitals.—The meeting of the Académie de Médicine of January 27 was devoted to a discussion of the contagiousness of tuberculosis and the many deaths resulting from infection in hospitals. Several members consider it as contagious as diphtheria, measles or smallpox, and say it should be isolated and disinfected with the greatest care. Terrier asserted that the mortality among the internes, nurses and servants of the hospital he is connected with traceable to infection from phthisic patients, is something frightful, as he has watched its development year after year. All agreed that the present methods of treating persons affected with tuberculosis are criminally lax in regard to the general health of the community, and radical reformation is imperatively necessary.

Congenital Luxation of the Thigh and its Treatment.—It is a comparatively easy matter to diagnose this trouble, but more difficult to discover its etiology. We usually find that it is due to a lack of proportion between the head of the femur and the socket. The former is usually properly proportioned, but the socket is often too small, and also the neck. The muscles are also sometimes involved, which can be determined by noting the effect of electricity upon them. In trying to manipulate the parts into place, the resistance we encounter in working down the upper end of the femur, is due less to the pelvi-trochanterian muscles than to the iliac and psoas, and also to a thick fibrous band parallel to the Bertin ligament, starting from the lower part of the capsule. Treatment should be very slow and gradual, commencing as promptly as possible after diagnosis is established. If the head can be successfully placed in the socket, a plaster cast should be applied for four months, changing it occasionally. If this fails, extension is the next treatment to be applied, continued for several weeks, when manipulation should be recommenced. If the femoral head is in place, but does not fit, surgical intervention becomes necessary to enlarge the socket. If the neck is crooked it must be reduced and kept in position until osteotomy can be performed. If the head of the femur is still held in such a way that it can not slide down into the socket, the obstacle must be cut, and the head and socket altered to fit each other. In malformations or deformities where the head of the neck are wanting, surgical intervention is strictly counterindicated. In these cases all that is possible is to teach the patient to walk, and by means of a correcting corset modify the lumbar deformity and prevent the femur from riding up, as far as this is a possibility.—*Journal de Médecine*, Paris.

Leucocytes and Albumin in the Urine as Aids to Diagnosis.—Reinecke and Goldberg have been experimenting to determine the number of lymph corpuscles in the urine. The former used the Thoma-Zeiss apparatus after thoroughly mixing the urine with a 1 per cent. salt solution. The variations between extremes noted were from 3.73 to 26.74 per cent. The improve-

ment of a cystitis can be distinguished in this way. If there is more than 1 per cent. albumin to 100,000 leucocytes in a cubic millimeter, there is reason to suspect an accompanying nephritis. Goldberg asserts that more than 1 per cent. albumin to 50,000 pus cells indicate true renal albuminuria. He has also numbered the red blood corpuscles in hematuria and calculated the amount of blood lost. He concludes that if there are less than 1000–3000 red blood corpuscles in a cubic centimeter of urine, then the presence of albumin is proof of renal albuminuria. He also adds that if there is more than 1 per cent. albumin to 30,000 blood corpuscles in a cubic centimeter of filtered urine, then a renal albuminuria coexists with the albumin derived from the blood.—*Berl. klin. Wochens.*

Washington Notes.

Weekly Report of the Health Department.—The report of the Health Officer for the week ended February 22 is as follows: Number of deaths (stillbirths not included), 118; death rate per 1,000 per annum, 22.27; death rate per 1,000 per annum, corresponding week last year, 25.76.

Medical Society.—At the meeting of the society held on the 26th ultimo, Dr. Wm. Forwood, U. S. A., reported two cases of diseased liver operated upon by himself. In the first the gall bladder contained 419, and in the second 705, stones. Dr. Robbins read a paper on "Syphilis of the Vital Organs." Dr. Metzeroll read a paper entitled "Two Hundred and Fifty Cases of Syphilis Faultily Treated by Specialists." Dr. MacKall reported a case of foreign body lodged above the soft palate.

Death of Dr. Smith Townshend.—Dr. Smith Townshend, for fourteen years Health Officer of the District of Columbia, died suddenly February 25, and was buried on the 27th with Masonic honors. He was one of the most honored and respected members of the profession.

Retirement of Medical Director Wales.—Dr. Philip Skinner Wales, ex-Surgeon-General of the United States Navy, and now a medical director serving on the naval retiring board, was retired from active service on the 27th ultimo.

Washington Board of Trade.—At the special meeting of the Board of Trade held on the 25th ultimo, under the direction of its Committee on Public Health, Dr. Samuel C. Busey, its chairman, reported the following preamble and resolution, which was unanimously adopted by the Board:

Whereas, the city of Washington, being the capital of the United States, should be placed and kept in the best sanitary condition; and

Whereas, such condition can only be secured by having every habitation or habitable house connected with an ample supply of pure drinking water, and with a system of foul water and sewage disposal which will promptly remove such fluids beyond the city limits in such a manner as to absolutely prevent soil pollution; therefore, be it

Resolved, 1. That the general system of water supply from the Potomac River should be extended so as to be available for the supply of every habitable building now in the city or which may be erected within the city limits, and that this provision should be extended as far as possible to the immediately adjacent suburban districts.

2. That the general water supply should be purified by sedimentation and filtration (the first being necessary at certain times and the second at all times) before it is admitted to the mains.

3. That the system of sewerage which has been adopted should be extended *pari passu* with the system of general water supply until every habitable house can be readily connected with it.

4. With the completion and purification of the conduit system of water supply all springs, pumps and wells should be closed by such means and methods as will prove so effective that no human being can obtain drinking water from either of these sources.

5. As rapidly as possible, *pari passu* with the extension of the conduit system of water supply and system of sewerage, the owners of every habitable and inhabited house should be compelled to make satisfactory connections with such systems of water supply and sewerage, and all privy boxes, cesspools and other methods of disposal of human excreta be effectively abolished.

6. Without adequate supply of pure water for all domestic purposes and sewer connections of habitable and inhabited houses, pollution of soil, foods and drinks and the diseases due to such pollution can not be prevented; and

Whereas, the enormous and constantly increasing area of marsh along the eastern border of the city is a constant menace to the health of the residents of the eastern section of the city, and especially so to the inmates of the almshouse and hospital, St. Elizabeth's Asylum and army and navy forces, officials and employes at the Marine Barracks and Navy Yard; therefore, be it

Resolved, That the reclamation of these marshes is imperatively demanded and should be accomplished without unnecessary delay.

The medical men on the committee are Drs. S. C. Busey, Geo. L. Magruder, W. W. Johnston, W. P. C. Hazen and W. S. Thompson.

Louisville Notes.

Academy of Medicine. At a recent meeting of this society, a symposium of papers, was presented on rheumatism. The following were the titles: "Etiology and Pathology," Dr. Carl Weidner; "Complications," Drs. Frank C. Wilson and Crittenden Joyes; "Treatment, non-medicinal," Dr. Curran Pope; "General Treatment," Dr. T. H. Baker. At the last meeting Dr. Albert Muench read an interesting report of cases. At the next meeting Mr. E. H. Mark, Superintendent of the Louisville Public Schools, and formerly Professor of Physics and Chemistry in the Louisville High School, will give a practical lecture and demonstration of the Roentgen rays, exhibiting some photographs taken in this way. The discussion will be opened by Dr. H. M. Goodman, who has done some work in this line.

Dr. W. H. White, Health officer, has been the recipient of many commendatory letters and resolutions from the various medical societies, and petitions, signed by medical men and laymen, are to be presented to the Mayor, requesting that Dr. White be retained in his present position.

The Report of the Health Officer for the past month is as follows: There was a total of 259 deaths; pneumonia caused 32, consumption 30; organic heart disease 17; cerebral meningitis 13; and there were 18 stillbirths. There were 226 deaths in the corresponding month last year; annual death rate per 1,000, 16; vaccinated, 400; diphtheria, placarded 27, of which there were 5 deaths; scarlet fever, placarded 40, with no deaths. Diseased cattle killed 128, and 277 diseased cattle condemned and sent out of the city. For the week past there were 90 deaths, pneumonia causing 13.

Dr. Nell.—Dr. E. M. Nell, State Senator from Adair County, has been decided upon, by the Sinking Fund Commissioners as the warden for the Frankfort penitentiary.

State Board of Health.—This body, with a full meeting, held its session recently in this city. Several important points came up for discussion, the chief topic being the suppression of the cerebro-spinal fever in the southern portion of the State. The State Board Bacteriologist was sent to the infected county, with full power to act for the board in stamping out the epidemic.

Norton Infirmary.—The following report has been published, showing the charitable work done by the John N. Norton Memorial Infirmary of this city. During the year 1893 there were forty-two patients who occupied endowed beds 140 weeks and six days; seven patients occupied endowed cots, sixty-nine weeks, two days. In 1894, thirty-six patients occupied endowed beds, seventy-six weeks; six patients occupied cots fifteen weeks, three days. In 1895 twenty-seven patients occupied endowed beds one hundred and six weeks and four days; three patients occupied cots nine weeks and six days. This report was made to correct a rumor, accidental or malicious, which stated that no charity patients were received at the Norton Infirmary and that pay patients occupied endowed beds continuously.

Cincinnati Notes.

THE MORTALITY REPORT for the week ended Friday, February 21, gives: Membranous croup 1, diphtheria 1, influenza 2, measles 3, scarlet fever 1, typhoid fever 2, other zymotic diseases 3; cancer 5, phthisis pulmonalis 14, other constitutional diseases 6; apoplexy 5, bronchitis 10, convulsions 4, gastritis and gastro-enteritis 3, heart disease 5, meningitis 5, peritonitis 2, pneumonia 12, other local diseases 21; deaths from developmental diseases 14, deaths from violence 1, deaths under 1 year 26, deaths from 1 to 5 years 18; deaths from all causes 120. Annual rate per 1,000, 17.82; deaths during preceding week 148; deaths during corresponding week, 1895, 165; deaths during corresponding week, 1894, 102; deaths during corresponding week, 1893, 129.

DR. F. W. HARMON has been to Columbus before the Legislature to urge that additional appropriation be made for Longview Asylum in order to avoid the necessity of Hamilton County meeting the deficiency. His report for last year shows: Total expenses, $145,000; number of patients, 1,023; food, light and clothing per capita, $114. The per capita expense was $3 lower than the average of the other Ohio institutions.

THE LAST LOT OF DRUGGISTS who were arrested by the State Food and Dairy Commissioner decided to fight their cases before juries instead of pleading guilty as heretofore, and as a result five out of nine were found not guilty.

DR. G. D. LIND, of the National University, delivered a lecture on "The Oyster and Its Relations" before the Cincinnati Society of Natural History last Tuesday evening.

DRS. SCHMIDT, RANKIN, KEARNS, WINTERMEYER AND WALLINGFORD, the district physicians of Covington, have requested the City Council to raise their salaries from $12.50 to $30 per month, and as an inducement offer to furnish all necessary medicines in tablet form, which they claim would result in a saving to the city of about $150 per year.

THE NEW CATHODE RAYS were tried at the Presbyterian Hospital last week by several of the staff to locate if possible a bullet which was supposed to have lodged in the interosseous tissue of the arm of a young boy who was accidentally shot and in which the probe failed to reveal the location of the bullet. The results were unsatisfactory, the failure being partly attributed to the batteries.

AN UNUSUAL CASE of aneurysm located in the cervical vertebra was admitted to the Cincinnati Hospital this week. The patient, a young man, was admitted for treatment of a bad cough which, upon examination, proved to be the first stage of phthisis. After being treated for several days he felt much better and was walking around in the ward; one of the nurses noticed him lie down, and passing by the bed a few moments later saw he was dead. An autopsy was ordered and an aneurysm was found pressing on the spinal cord. With the exception of a slight tubercular invasion of the lungs he was in good physical condition. This is the first case of the kind ever admitted to the hospital.

THE BOARD OF MANAGERS of the Presbyterian Hospital have in contemplation the addition of an emergency surgical ward to the institution to meet the increasing demand for beds.

THE CINCINNATI TRAINING SCHOOL FOR NURSES, which formerly had the contract with the Cincinnati Hospital to supply its nurses has decided to close the portion of the institution devoted to the training of nurses for want of financial support. It will still be open, however, to a limited number of private patients.

A NUMBER of Cincinnati men are aiding in having the bill now before the Legislature passed, fixing the penalty for abortion at twenty years imprisonment instead of seven as at present. The recent Pearl Bryan case has had much to do in arousing this sentiment.

THE BOARD OF MEDICAL EXAMINERS made the report of their annual examination to the Mayor this week and it shows 204 men in perfect physical condition, 141 in need of active exercise for at least one hour each day, 50 who are only in fair condition and 16 who are totally unfit for service.

THE MEDICAL COLLEGE OF OHIO has at last formally combined with the University of Cincinnati.

AT A MEETING of the Alumni of the Cincinnati College of Pharmacy held February 24 for the purpose of having the present pure food and dairy laws amended, the following committee was appointed to draft an amendment to the laws and present it to the Legislature during its present session: Otto Rauchfuss, Frank Freericks, Alfred De Lang, Theo. Wetterstroem and Andrew Diebold.

THE ANNUAL ELECTION of officers of the Academy of Medicine resulted as follows: President, Jos. Eichberg; First Vice-President, Robt. W. Stewart; Second Vice-President, Amelia J. Pryor; Recording Secretary, W. E. Schenck; Corresponding Secretary, A. G. Drury; Treasurer, Geo. E. Jones; Financial Secretary, S. E. Allen; Librarian, Arch. I. Carson; Trustees, John A. Murphy, N. P. Danbridge and J. T. Whittaker.

THE PUBLIC SERVICES.

Marine-Hospital Changes. Official list of changes of station, and duties of Medical Officers of the U. S. Marine-Hospital Service, for the nineteen days ended February 19, 1896.

Surgeon R. D. Murray, when relieved at Tortugas Quarantine, to proceed to Mobile, Ala., and assume command of Service, Feb. 19, 1896.

P. A. Surgeon C. T. Peckham, to proceed from San Francisco Quarantine to Port Townsend, Washington, and assume command of service, Feb. 6, 1896.

P. A. Surgeon P. C. Kalloch, when relieved at Cincinnati, Ohio, to proceed to Charleston, S. C., and assume command of Service, Feb. 6, 1896.

P. A. Surgeon L. L. Williams, when relieved at Charleston, S. C., to report at Bureau, and then to proceed to Tortugas Quarantine and assume command of station, Feb. 6, 1896.

P. A. Surgeon G. T. Vaughan, granted leave of absence for seven days, Feb. 17, 1896.

P. A. Surgeon J. O. Cobb, when relieved at Port Townsend, Washington, to proceed to Cincinnati, Ohio, and assume command of Service, Feb. 6, 1896.

P. A. Surgeon H. D. Geddings, when relieved at South Atlantic Quarantine, to report at Bureau for duty, Feb. 6, 1896.

P. A. Surgeon M. J. Rosenau, to assume command of the San Francisco Quarantine Station, Feb. 6, 1896.

Asst. Surgeon J. A. Nydegger, to proceed from Washington, D. C., to Reedy Island Quarantine for special temporary duty, Feb. 17, 1896. To report at Bureau preparatory to assuming command of South Atlantic Quarantine, Feb. 19, 1896.

RESIGNATION.

Asst. Surgeon Edgar Strayer, resignation accepted, to take effect Feb. 14, 1896.

Change of Address.

Barbat, J. Henry, from 1612 Folsom Street to 1412 Folsom Street, San Francisco, Cal.; Baird, T. M., from Hot Springs, to Forest City, Ark.
Manley, T. H., from 302 W. 53rd Street to 115 W. 49th Street, New York.
Nye, Geo. L., from Wythville, Va., to Hurricane, W. Va.
Van Cleve, A. H., from Eddy, N. M., to Sheldon Blk., El Paso, Texas.

LETTERS RECEIVED.

Alma Sanitarium Co., Alma, Mich.; Atkinson, W. H., Washington, D.C.; Ashby, T. A., Baltimore, Md.
Bodine, J. M., Louisville, Ky.; Brown, F. F., Adv. Agency, New York, N. Y.; Berger, S. C., Philadelphia, Pa.
Clary, W. P., Columbus, Ohio; Coale, R. Dorsey, Baltimore, Md.; Cook, G. Wythe, Washington, D. C.; Chaille, S. E., New Orleans, La.; Cannaday, C. G., Roanoke, Va.; Comegys, E. T., P. O. Rosebank, N. Y.; Canfield, B. A., Chicago, Ill.; California Fig Syrup Co., San Francisco, Cal.
Damour, F., (2) Bodekow, Mo.; Davis, Geo. S., Detroit, Mich.
French, Pickney, St, Louis, Mo.; Fairgrieve, G. W., Enid, O. T.; Feltz, Julius, Hoboken, N. J.
Grinnell, A. P., Burlington, Vt.; Globe Mfg. Co., Battle Creek, Mich.
Hull, A. H., Webster City, Iowa; Hardy, H. T., Kaneville, Ill.; Huntinga, T. G., Zeeland, Mich.; Harris, T. C., Raleigh, N. C.; Hummel, A. L. Adv. Agency, New York, N. Y.
Jelks, J. T., Hot Springs, Ark.; Kane, Evan O'Neill, Kane, Pa.
Lillard, Benjamin, New York, N. Y.
Marshall, John, Philadelphia, Pa.; Mudd, H. H., St. Louis, Mo.; Mills, Chas. K., Philadelphia, Pa.; Maltine Mfg. Co. The, New York, N. Y.; Mereness, Dwight, Milwaukee, Wis.
Parke, Davis & Co., (2) Detroit, Mich.
Raymond, J. H., Brooklyn, N. Y.; Richardson, W. L., Boston, Mass.; Reitzman, C., Austin, Ill.; Rowell, H., Hearney, Mo.; Rook, J. W., Louisville, Ky.
Spiegelhalter, J., St. Louis, Mo.; Sheldon, S. E., Topeka, Kans.; Small, E. H., Pittsburg, Pa.
Tucker, C. F., Syracuse, N. Y.
Van Doozer, B. R., Chicago, Ill.
Wales, A. H., Chicago, Ill.; Winn, J. J., Norwood, Ohio; Warner, W. R. & Co., Philadelphia, Pa.; Woody, Samuel E., Louisville, Ky.; Welch, Wm. H., Baltimore, Md.